THE

AMERICAN FARMER:

DEVOTED TO

Agriculture, Horticulture and Rural Economy.

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"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." . . . . . *Virg.*

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MAY.

"Behold the young, the rosy Spring,
Gives to the breeze her scented wing,
While virgin graces, warm with May,
Fling roses o'er her dewy way.
Now the earth prolific swells
With leafy buds and flowery bells;
Gemming shoots the olive twine,
Clusters bright festoon the vine;
All along the branches creeping,
Through the velvet foliage peeping,
Little infant fruits we see
Nursing into luxury."

WORK FOR THE MONTH.

THE CORN CROP.

We have only to suggest with reference to this crop, that there be no unnecessary delay in planting, and after planting that it be not allowed to lie too long unworked. We give line upon line on this point, work early and finish early.—However your land may be manured, a small application to the hill according to last month's suggestions is advisable.

TOBACCO.

Get rid of your old crop after corn planting, if possible. Give your beds very careful attention, keeping thoroughly clean, and manuring them after each picking. Be sure to have your planting ground in readiness that you may not miss a "season." If the plants are abundant they may be drawn more freely than would be advisable otherwise, and much smaller plants may be set out in May than would be proper after the ground becomes thoroughly heated with the summer's sun. If there be any scarcity of plants, do not risk putting out small ones.

ROOT CROPS.

The main crops of these, whether Beets, Parsnips or Carrots, should now be planted. The Sugar Beet and Mangold Wurtzel are the most easily raised and most productive of these crops, but all are valuable for cows, sheep and hogs, and the Carrots for horses. They require good soil abundantly manured, if maximum crops are expected. We are very partial to the Sugar Beet for milch cows. They can be sown early, they bear transplanting to fill vacancies, they are a cleansing crop, they keep well till the month of May, they are good for all kinds of stock, but for milch cows especially, and are best fed raw, and they yield very largely. An acre that will yield a hundred bushels of potatoes, will give four to five hundred of beets, with no risk of losing the whole, as with the potato, by rot.

CLOVER FIELDS.

Keep clover fields, if you mean to give your land the full benefit of improvement by the crop, unmolested by stock until it comes into bloom. Then let it be run over quickly by cattle enough to tread it well down. If it be desirable, however, to economise the crop as such, you will of course only cut it to use as green fodder as you may want it, and the remainder for hay after it comes well in bloom—the best time when about half the blossoms have turned brown.

POTATOES.

Any time in May is entirely too early to plant Potatoes, in our opinion, for the main crop. Yet there are many who, from long custom, continue to plant this month, and many who echo the opinion universally prevalent in Northern journals, that early planting is more exempt from rot. This may be quite true there generally and

very far from it here, owing to difference in the season. The truth is as to this, it is merely accidental. In a certain condition of the crop it is liable to be affected by the sort of weather which produces rot, and this may be either early or late, but the early planted is almost certain to be forming the bulb when our July drought comes on, and to be cut short by it. The varieties require different length of time to mature, and of course those requiring the longer time should be planted earlier. The peach blow, undoubtedly one of the most valuable sorts, is one of these, and the 10th of June is quite early enough for them.

SWEET POTATOES.

The plantings of this valuable root should be put out now on light, rich, well-prepared soil.

PUMPKINS.

This is a useful article of food for milch cows and hogs in the fall. It is a common practice to plant among the growing corn. Apart from the draft they make there upon the corn supplies, this method involves a good deal of trouble in collecting and bringing to the feeding ground. A better plan is to plant a half acre or more, as you may deem advisable, near where you mean to feed them. Manure amply in the hill and plant ten feet apart.

CYMBLIN.

If hogs are confined to a lot where they demand other food than grass, the Cymblin is one of the best things that can be grown for the purpose. It comes early into use, is very productive, and makes excellent food; the bunch Cymblin is best. Manure well in hill and plant four to five feet apart.

FIELD PEAS.

The Field Pea, of whatever kind or for whatever purpose, should be planted from the middle to the last of the month, to get a full and well ripened crop. Sown broadcast for ploughing under one and a half to two bushels of seed are used. A small lot of them will be of great service for early feeding of hogs, and some of best sorts, as the Lady Pea, should be planted for family use, especially where there are many negro children to be fed. The Pea is emphatically a Southern institution and should be sustained.

SHEEP SHEARING.

Do not delay this work too long. The earlier this month the better, provided you are prepared to give your flock protection from cold rains.

SUGAR MILLET.

The middle of the month is early enough to plant. The seed germinates slowly and should be soaked in warm water from twelve to twenty-four hours before planting.

HUNGARIAN GRASS.

This may be sown from the middle of the month to the middle of June. If sown early it will give two good cuttings. On deep rich mellow soil, the crop of hay will be heavy, and if the seed are allowed to ripen, it is an exhausting crop. Those who want early as well as abundant food to feed, either green or dry, will find this answer well, and in the scarcity or shortness of the hay crop, it will prove an ample substitute.

BROADCAST CORN.

This makes valuable green provender in August, when grass may be scarce. Sow now and at intervals of two weeks at the rate of two bushels of seed to the acre.

THE VEGETABLE GARDEN.

MAY.

We have suggested heretofore that the Garden, under the charge of the lady of the household, should be a sort of "model farm," a sample of "high-farming," which might tempt the lord of the manor into better methods of culture by the force of example on a small scale. However timid we may be of expenditures so large as would be required to manure and cultivate in the best manner the broad acres of the farm, there can be no such excuse for the Garden. The difficulty here is that the liege lord is somewhat too stingy of the help absolutely necessary, and thinking the Garden of "no account" in comparison of his more extended operations, leaves his lady to help herself as best she may. We enter our protest against a policy so unwise, and insist upon all needful aid in this department.

BEANS.

Kidney Beans should be planted at intervals for a succession of crops.

CAROLINA AND LIMA BEANS.

Plant these in good loamy soil.

CUCUMBERS.

Plant seeds of these, putting a good shovelful of compost in the hill and mix well with the soil.

CORN.

Corn for table use should be planted every two weeks.

CABBAGES.

Stir the soil around early Yorks, drawing the earth a little to the plants. Sow seeds of late

sorts if not already done. Set out plants of Savoys and red pickling Cabbage.

CELERY.

Sow Celery seed for late crop in a moist, rich bed.

EGG PLANT.

By the 10th of the month these should be transplanted.

TOMATOES.

Plant out these in ample supply for a full crop in rich soil.

LETTUCE.

Sow Lettuce seed in borders for fall use.

CARROTS, PARSNIPS AND BEETS.

It is not too late for these if not already planted. Soak the seeds twenty-four hours in warm water.

ONIONS.

If seeds have been sown as heretofore directed, thin the plants to three inches apart and keep them strictly clear of grass.

RED PEPPERS.

These should be sown now for pickling.

HOPS.

"Ground gravelly, sandy, and mixed with clay,
Is naughty for hops, any manner of way;
Or if it be mingled with rubbish and stone
For dryness and barrenness let it alone.

Choose soil for the hop of the rottenest mould,
Well dunged and wrought, as a garden plot should;
Not far from the water (but not overflown,)
This lesson well noted is meet to be known."

Thomas Tusser.

THE FRUIT GARDEN.

NEWLY GRAFTED TREES.

Trees grafted last month may have the clay and bandages taken off whenever the grafts have united with the stock, as shown by their shooting freely.

NEWLY PLANTED TREES.

Give these an occasional watering in very dry weather, unless you have mulched them. A good mulching is the best protection.

PEACH, APRICOT AND NECTARINE SEEDS.

Thin out the superabundant fruit from these. The young fruit will make good pies and the remainder will be greatly better in size and quality for the thinning.

CATERPILLARS AND OTHER INSECTS.

Look out for the nest of Caterpillars on your trees and destroy them before they disperse.

STRAWBERRIES.

Strawberries require much water when setting their fruit, and in dry seasons it should be applied freely. A good mulch of straw, pine shatters or anything that will cover the ground well is of great advantage for the uniform moisture and keeping the fruit clean. Where especial care is to be taken of the size and quality of the fruit, the runners should be cut off as they start.

THE FLOWER GARDEN.

ANNUALS.

Many choice and showy Annuals may still be sown, if not already done, to keep up a successive bloom, and plants already growing may be set out with care in the open border after the tenth of the month.

DAHLIAS.

Put these in the ground with plenty of rich compost.

LAWN AND WALKS, &C.

Keep Lawns and Walks in strictest order. The former should still be top-dressed if it requires it. A fine thick turf cannot be had if the soil be poor. Ashes and plaister answer well the purpose. Roll well to leave the ground in order for the scythe, and cut closely as often as the scythe will take well hold of the grass. Roll and sweep gravel walks once a week. Keep flower beds in nicest order.

BEDDING PLANTS.

The various bedding plants, Verbenas, Petunias, Heliotropes, Geraniums, &c., should now take their places in the beds preparatory to the summer bloom.

THE GREEN HOUSE.

CAMELLIAS.

These should be freely watered. Toward the close of the month, place out of doors in a shady place.

GERANIUMS, CINERARIAS, CALCEOLARIAS, LANTANAS,

Will now be blooming abundantly. Remove to the open ground all that are not in bloom.

RE-POTTING.

Prepare now for next year's bloom by re-potting and heading in, Euphorbias, Poinsettias, Gesnera Oblonga, &c.

CHINESE PRIMROSES.

These may be propagated by cuttings and seeds of single sorts sown for next year's bloom.

HEATHS

Should be put into larger pots and into a frame for protection.

PELARGONIUMS,

Coming into bloom, should be watered carefully and fumigated if the green fly attack them.

FUCHSIAS.

Put these where the hot sun will not strike them and water occasionally.

[For the American Farmer.]

Sorrel—Its Cause and Cure.

The abundant supply of the peculiar food of any plant in the soil, seems to determine its growth and ascendancy over all other plants more than the most careful seeding and cultivation. This is so common a proverb among all farmers that it hardly requires a word of illustration. The Jamestown weed (stramonium) will exclude all others around the pig stye, and the white clover will as inevitably appear where ashes are spread. No one would sow the seed of either of these plants in order to insure their presence in our neighborhood. On the other hand, the seed of the wormwood (absinthium) will utterly fail in soil deficient in potash, and no amount of cultivation will compensate for the absence of the specific food of this plant; moreover, I believe that experience teaches that until the potash is restored to such a soil, the grape is equally a failure. It is generally admitted that classes of plants are as distinctly named as animals, by their peculiar food; for instance, "lime plants," "soda plants," "potash plants," &c.—The fact that the Mackinaw horse eats fish, does not change the law that places him among graminivera—and the *partial substitution* of lime for potash in our Western grape does not change the law with regard to the nutrition of certain plants.

My next proposition is: *that the condition or state in which plant food is supplied, is of more importance than the quantity.* This I have illustrated most abundantly in a paper headed "Nascent-Manures," that I wrote for the *American Farmer* seven or eight years since.*

Farmers pay about 25 cents per pound for all the nitrogen they use in Peruvian guano, and millions of dollars are annually sent to Peru to obtain nitrogen *in this form*—all of which could be saved if our young wheat plants would be satisfied with the *pure article* that we have in abundance here. We are *under* an ocean of nitrogen forty-five miles deep, our atmosphere being four-fifths (or about 80 per cent.) nitrogen —*pure* (*uncombined.*) Remember, I do not say that the nitrogen of ammonia is *directly* nourishing to plants, but I do say that it is *the* valuable element of guano, and the most valuable element of all ammoniacal manures—and fifty dollars out of every sixty dollars that are paid for Peruvian guano are paid to obtain nitrogen, because somehow its presence as ammonia not only determines whether the wheat shall germinate, but the "stooling" of the wheat—its *exclusive* possession of the soil, and not only the quantity but the quality of the grain, especially the amount of gluten (a nitrogen compound)—THE characteristic element of good flour.

I contend that the *presence* of the most simple *compound* of nitrogen is the seed of the crop quite as much as the seed wheat. Its presence in the soil seems to act by a sort of sympathy, as the nucleus determines *where* and *when* crystal shall form, and as "like produces like." Even the dog will die if deprived of nitrogenous food, although fed on fat and amylaceous food and bathed in an atmosphere four-fifths of which is pure nitrogen—i. e. uncombined nitrogen.

My third proposition is: that some inferior plants and animals can digest or appropriate food that is poisonous to the higher orders—indeed they seem to prefer or luxuriate in an atmosphere that would stifle or poison the more valuable plants and animals. We can often trace an analogy between the food they prefer and the tissue that it is intended to build up or produce. For instance: the hen seeks pieces of oyster shell and lime to form the shells of her eggs. The use of vegetables containing oxalic acid, such as the rhubarb plant, seems to set up or create the disease called oxaluria in man, especially if predisposition exists to the formation of mulberry gravel.

A damp, fœtid atmosphere like that of a close cellar seems to propagate toads and snails, snakes and salamanders, with the "must plant" and the various fungi; so certainly and rapidly are they produced, that some have been tempted to swallow the monstrous notions with regard to "spontaneous generation" that are now being revived by some learned fools. It is well ascertained that unless the skin is kept clean, and the blood well ærated or oxygenated, (after being cured of the disease referred to,) the patient soon is afflicted again with oxalic acid ($C_2 O_3$) gravel; in other words, a deficiency of oxygen forms a *lower* oxide of carbon carbon*ous* acid instead of carbon*ic* acid (CO_2) that invariably is formed if sufficient air or oxygen is present, whether in plant or animal—whether the result of life, or combustion out of the body. Every one has noticed the beautiful blue flame that plays over the back part of the fire when the draught is partly closed or some air enters above; also the beautiful blue cone in the centre of the lamp flame. This is carbonic oxide, (CO,) the peculiar food of the sorrel plant, "*the oxalis*" or oxalic acid plant—all other plants breathe or *in*hale a *higher* oxide of carbon, viz: carbonic acid (CO^2)—whereas sorrel, like the frog, can breathe an inferior atmosphere, viz: carbonic oxide (CO)

*Vol. X, p. 257, and vol. XI, p. 23.

because its peculiar element, oxalic acid, is *the half way oxide* of carbon, the sesquioxide ($C_2 O_3$.) My reasons for this opinion are not based *alone* on the remarkable analogies that I have recited above—but also upon the following observations that may be confirmed by the most careless observer:

1st. I noticed that sorrel seems to spring up spontaneously around an old decaying log or stump, and often on top of the latter—*the very soil of all others where the air is robbed of its oxygen*, forming carbonic oxide and water, leaving a coaly black soil that every one will recognise as THE sorrel soil.

2d. I was required by a friend on the Eastern Shore of Maryland to account for the growth of sorrel *on the sides of his marl pit!* This I suppose originated from the *same* cause, viz: the deficiency of oxygen. The pyrites or sulphuret of iron that occurs in such places robs the soil of its usual supply of vital air.

My third observation was made by my tenant, who dissuaded me from hauling ditch bank *upon the upland* because it produces sorrel wherever applied, unless previously *spread* upon the barn yard, where the *black* oxides of iron pass rapidly into the yellow or red oxide, and it becomes a valuable manure. While black it robs the soil of oxygen, and nothing but sorrel can grow in such a soil, however rich it may be in other respects. It is *not*, then, the acidity of the soil that produces sorrel, but the absence of oxygen, or the *relative* proportion of vital air, or what amounts to the same thing, the presence of vegetable matter decaying *rapidly* (a sort of combustion)—or the presence of black oxide of iron, as in marsh mud—or pyrites—*in all these cases the same cause is operating to produce carbonic oxide, the food of sorrel.* The BEST acre in my friend's field *invariably* fails to produce any crop. When well set in wheat, the sorrel is blamed for the failure. About 100 bushels of lime were applied to it last autumn, and I predict *another failure*, as I am satisfied that a good underdrain is the only corrective of sorrel *in his case*.

But I must defer the cure of sorrel until another number of the *Farmer*, as I have already exceeded the limit that I proposed. I wish to recommend the rational system. The empirical use of lime is not to be relied on, and the pest is of so much importance that it has employed the pen of some of the best friends of scientific agriculture, the most distinguished among whom, perhaps, is Ruffin of Virginia.

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Annapolis, Md., 22d March, 1861.

Errors in Rural Economy.

To the Editor of the American Farmer:

DEAR SIR: As contributors to agricultural and rural journals almost universally deal in specialities, I may, perhaps, by way of variety, be permitted to generalize. I hope so, for such a license suits my desultory education and nomadic habits better than the general manner of discussing rural topics. Nevertheless, if I am permitted the freedom of the *Farmer*, I will state facts and results of agricultural experiments, whenever the former is unquestionable and the latter seems to require publicity; but nothing beyond that will I go, for I hold that of all other publications, those devoted to rural affairs ought to publish only reliable information and sound instruction.

In all sections of our country the practice of *crowding* crops, cattle, trees, shrubs, pigs and poultry, is by far too dominant an error. If the man expects to realize a fair yield of corn from a field planted three feet by three, and left to grow three and four stalks in a hill, he is sure to become a disappointed man about harvest time, and very apt to complain of the unfavorable season, when the fault lies with himself, and the unfavorable circumstances under which he has forced his corn to grow. Many of the Georgia planters understand and avoid this error by *drilling* their corn in six to seven feet between the rows, and having the stalks grow singly.—Probably three-fourths of our farmers at large, having determined to sow a field of uncommonly poor land in oats, double the quantity of seed, to insure a crop. The result is a growth of straw that will scarcely hide a bantam pullet, five bushels of oats per acre, and a further exhaustion of the soil, a good deal beyond what a heavy crop would have effected. Every one knows that it requires more food to keep alive two scrubby runts of pigs of twenty pounds weight, than would fatten a sleek, thrifty hog of one hundred pounds. Just so it is with the oat field. The soil that could perfect one fair-sized straw and its head of grain, could not supply the requisite nourishment for two, occupying the same space.

Another error quite as prevalent, is the mania for scratching over (cultivating it is not) the greatest possible surface. Ask a farmer who is breaking up and preparing for corn, by a single ploughing and a furrow five inches deep, why he does not run a subsoil plough and put his land in better tilth, and he will reply: "O, I have not time for that; I have this forty acres to get ready for corn, and I am behindhand

now." So he goes on year after year, skimming the surface, wearing out and exhausting his soil of the forty acres, when twenty acres of it, with a great deal less labor than he has expended on the whole, would have given him one-third more grain, leaving the remaining twenty acres to become richer every year in pasture or meadow, while it afforded either summer or winter food for a third of his stock.

Stock growers will persist in crowding cattle and sheep in so many superficial acres of pasture, feed or no feed; and too often succeed in achieving beef and mutton in far better condition for the "*turf*" than the table.

American market gardeners, or men who make a business of growing vegetables for market, often carry the crowding system to the extent of planting, first, potatoes three feet apart each way, then cabbages between the hills, and last of all, sowing fall turnips all in among them. That is economizing space with a vengeance. It reminds me of my experience some years ago, at the Peruvian and Bolivian *posados*, among the passes of the Andes. Bar-room, parlor, bedrooms, kitchen and store-room, all in one; and into this we bundled promiscuously; *senoras* and *caballeros*, *hidalgos* and half-breeds, horses, mules, lamas and dogs, sleeping, chatting, braying, neighing, barking, eating and drinking, wedged into an apartment twenty feet square. That economizing of space, however, was more productive, so far as the proprietor of the establishment was concerned, than any crowding of grain, vegetables or stock can be in our country.

We need not travel far in any direction to find instances of erroneous amateur horticulture in its chronic form. "A." sets out an apple orchard, with the trees twenty-five feet distant from each other. All very well if he stopped at that; but in his economical enthusiasm he fills in the spaces between the apple with peach trees. "B." improves upon "A's" error, by applying a second filling in between apple and peach trees, with dwarf pears. The natural result is, one-third of a crop of fruit, if the trees ever bear at all; death by starvation, to the peach trees first, then to the pears, and an enfeebled constitution to the apple trees, from which they will never recover.

Very frequently we see a bit of a garden, of sufficient capacity and natural fertility to furnish a supply of vegetables for a family of six persons, so shaded by a half dozen gnarled, knotty, scrambling old apple trees, whose yearly yield is perhaps a bushel of worthless "crabs," that to grow respectable vegetables underneath them is an utter impossibility. I am no advocate of the destruction of fruit trees under ordinary circumstances; but where a man owns but an acre of ground, and has a family to support, the discrimination between a few old, crabbed apple trees and a good supply of potatoes, cabbages, turnips, &c. ought to be in favor of the latter.

It is no unusual thing to find among those who make a business of producing poultry and eggs for our city markets, men who crowd from seventy-five to one hundred fowls into a mere coop, without light or proper ventilation, and then wonder that they get fewer eggs and raise only a quarter as many chickens as their more methodical neighbor, who keeps but a third as many fowls, but keeps them as a christian ought to keep poultry.

A farmer takes a fancy to prune his apple orchard, and at it he goes, with hatchet and handsaw, cutting and slashing whatever unfortunate branch comes readiest to hand, with no knowledge of the real requirements of nature, no thought beyond the accumulation of such a pile of brush as he imagines each tree ought to yield. Many a valuable tree has suffered a violent death at the hands of such thoughtless, ignorant horticulturists.

What we need sadly, everywhere among us, is more rural intelligence—a more universal dissemination of agricultural education. This we shall eventually have; but of all the branches of education extant, that pertaining to agriculture meets with the most stubborn, persistent, almost fanatical opposition, from a very large class of the community. Ask a neighboring farmer to subscribe for an agricultural journal that will cost him but *a dollar a year*, and argue to him that the investment will pay him a thousand per cent.—the chances are that, in seven out of every ten cases you will get the reply: "Well, I don't know; my father and grandfather got along right smart without any farm books or newspapers, and I reckon I can do as well as they did." This indifference to their true interests seems the more inconsistent, inasmuch as in a bargain, you will find these same persons as sharp as Damascus blades. They "will cavil on the ninth part of a hair."

Ignorance and prejudices are however slowly fading away, and the time will come at length, when agricultural literature and science will be acknowledged as the first necessity of the rural world.

R. C. KENDALL.

Reisterstown, Md.

"Shallow Ploughing—The Great Error of American Agriculture."

[Continued from April number.]

"Almost every summer furnishes abundant proofs of the great disadvantages of the practice of *shallow ploughing*, to both summer and winter crops, if we were but disposed to open our eyes and look for them. A very curious one lately happened on my own farm.

A field was sowed with wheat by a tenant, the ploughing from three to four inches; a deep hollow extended across part of the field, in a direction nearly east and west; the side exposed to the north tolerably good, the south exposure very rich; as might be expected, the wheat on the strongest soil made the most promising appearance in the fall, and also for some time in the spring; in the early part of which clover seed was sown on the whole, which came up well; a drought came on late in the spring; the south exposure *drying first*, the wheat soon showed the effects of it; and, the drought continuing, a considerable part entirely *perished;* the north exposure also suffered, but being more shielded from the action of the hot sun, was not so effectually dried. At harvest it was much the best wheat, notwithstanding the superior richness of the soil on the other side. A still greater difference appeared in the young clover; on the south hill-side it was almost entirely killed, on the other very little injured.

I have had some experience of the beneficial effects to be derived from *deep ploughing;* but the obstructions in most of my fields (particularly large stones just below the surface) have prevented my adopting the practice so fully as I could wish; yet the success that has always attended my experiments, in conjunction with my observations on the practice of others, has been conclusive evidence to my mind.

In the year 1795, I took possession of my present farm, and had a field ploughed for wheat, which had been thought for several years before too poor to cultivate, either in wheat or Indian corn; I saw rye growing on the best part of it, two years before, just before harvest, that I think would not yield two bushels to the acre. It was ploughed early in the spring, about eight inches deep, and repeated with harrowings, at proper intervals, several times during summer; it was sown about the last of the ninth month. The soil being weak, the growth in the fall was slow, as also in the spring, yet regular, the color always good and no appearance of suffering, either from *drought* or *wet;* at harvest, the straw was not tall, nor thick on the ground, but the heads large and well filled; the product, between sixteen and seventeen bushels per acre, except a part of the field, sown with a kind of wheat I was not before acquainted with, which was too thin, in consequence of a short allowance of seed. I observed the state of the soil, from time to time, until *harvest*, and found that even *then*, it was open and in good tilth, except a crust of two or three inches next the surface.

In the spring of 1796, with a large plough and four horses, I broke up part of a field; I measured the ploughing frequently, and found it in many places eleven inches deep and nowhere less than seven; so that the average was at least nine. This piece contained about four acres, on a gentle declivity; the surface too much exhausted to pay for cultivating any crop in the common way; this ploughing brought to the surface about five inches of earth that had never before been exposed, which was principally clay; at the upper edge of the piece of a bright yellow, which became gradually paler further down and of a bluish appearance near the lower side. After several stirrings, it was sown with buckwheat the same year; the crop tolerable; after buckwheat came off, the ground was ploughed and sown in rye, in the eleventh month, very little of which came up, owing, as I suppose, either to its being too late put in the ground, or the seed not good. It remained without further tillage until last year (1800) when it was again sown in buckwheat, which grew so large as generally to fall. Before it was ploughed in the spring, I took several of my friends to see the difference in the appearance of this piece and the ground adjoining, that had lain the same length of time out of tillage; it was discernable to a furrow; the *deep-ploughed* piece appeared of a fine open texture, and *dark* color, thick set with white clover; the adjoining ground, compact and hard, of a *pale* ash color, bearing scarcely a blade of any other kind of grass than that common to old fields, known by the name of poverty-grass. In short, one had the appearance of an exhausted old field, and the other of land lately manured. Those who expressed a sentiment on the subject, were of opinion that to those who did not know what occasioned the difference, the *deep-ploughed* piece would sell for double the price of the other.

Part of another field, from having a very retentive clay near the surface, was of that kind called cold, or sour land, and was thought unfit to produce any crop, either water or ice generally appearing on the surface, in an open time in winter. This was so thick set with white flint-

gravel and stones, that the first ploughing could not be deep; but having cultivated several crops on it, taken off the largest of the stones, and consequently been able to get a little deeper at each succeeding ploughing, the nature of the ground seems altered, so that now there is seldom either water or ice to be seen on its surface, more than is common to other places. It is now in red clover, very little of which has been injured by the late open winter. This piece has been manured; it is therefore unfair to ascribe the quantity of the crops, which have been good, to deep ploughing only; though I am of opinion, that on such land manures are not of much consequence without it.

I might have before observed, that one of the objections that will probably be made to deep ploughing, is the greater strength of team that will be requisite to perform it, and consequently an additional expense. This I believe, on consideration, will also be found to be without foundation. True it is that the first ploughing requires more strength of team; but then it is equally as true, that if the plough is a good one for the purpose, almost double the quantity will be performed in a given time. The four acres above mentioned was ploughed by four horses in less than two days; the furrows averaged seventeen inches in width. And as ground ploughed in this way will not acquire the same degree of firmness for many years afterwards, although it should remain untilled, it will be found that three horses to a plough will be sufficient for after ploughings, even for a grass-lay, and that two such teams will perform as much in a day as six horses in three ploughs of the common kind and of the common description of ploughing. Here then is a ploughman saved. In addition to this, it is to be remembered, that for reasons before given, land cultivated in this way will be preserved in good tilth with much fewer ploughings than in the other mode.

Thus, let the subject be considered on whatever ground we choose to take it up, either with respect to the preservation of the soil, the quantity of produce, or the quantum of labor bestowed, the advantage is greatly on the side of the method proposed.

But, let me again repeat it, that those advantages depend in great measure on the manner of performing it. It must never be forgotten that ploughing when the soil is very dry is of no other consequence than to destroy weeds, but when over wet, in stiff soils, the mischief is incalculable; it is at least irreparable for that season.

If any should be still disposed to condemn the foregoing observations untried—to say, that if those extraordinary advantages will result from *deep ploughing* that are ascribed to it, they certainly would have been long ago discovered and the practice universally adopted; that a great proportion of the inhabitants of the U. States, being engaged in the business of ploughing nearly one-half of their time, it is not reasonable to suppose those things could have escaped their observation.

As a full answer to such, let me call their attention to some of the absurd practices that the best of our cultivators are but just emerging from, and that probably they themselves remain in; let them view their own practice in these things, and then say whether they feel that consciousness of perfection, that will justify them in condemning proposed improvements without trial.

Let them reflect a moment on the propensity that almost every planter feels for clearing a piece of land every year, which is very commonly continued until there is little or no wood left, either for fuel or fences; and very often it happens that in the latter stages of this erroneous conduct, more than half their cleared land is so far exhausted as not to be worth cultivating —more acres of which, that they annually clear, it is amply within their power to reclaim and render as fertile as ever it was, and that with half the expense; yet strange to tell, every acre is neglected, while the clearing business is pursued with avidity, until at length the fatal blow is struck and necessity compels them to part with their murdered estates for a trifle, and seek refuge in the Western country. Witness, some of the lower counties of Maryland and a great part of Virginia.

Let them reflect on the immense labor that has been bestowed in the Southern States, in the business of raising great hills about Indian corn. It is now acknowledged, with good reason, by many of the best planters, that it is altogether useless in promoting the growth of the corn; but they say it is absolutely necessary to raise a small hill, to prevent the corn from falling, by storms of wind and rain. Let us try the wisdom of this improved mode. Every one who has paid attention to the growth of corn, must have observed that before, or about the time it arrives at the state of danger, it is sure to send out a circle of strong roots just at or a little above the surface; these are the supports of nature; and so well are they adapted to the purpose, that we seldom see a stalk torn up by the

roots except where the earth is previously washed from about them. If let alone, there is no other danger to be apprehended than from the breaking of the stalks, which indeed sometimes happens, and which hilling does not prevent. If it is bent down by wind and rain, when the wind ceases and the blades are released from their burden of moisture, it will of course rise. But the officious planter must do something to assist nature. He accordingly raises a hill; how does it affect the plant? Let him observe it soon after, and he will discover he has mistaken his aim, that nature, feeling herself thwarted, is endeavoring to repair the injury, by retaining a part of the *nutritive juices* provided for the support of the shoots above, for the purpose of sending out a *new set of braces* above the *new raised hill*.—This takes time, and frequently before the new roots have taken hold in the earth, a gust of wind and rain comes on; the consequence of which is, that the hill soon becomes softened by the rain, and the wind at the same time pressing the stalk against it, it gives way and leaves an opening behind the stalk; this opening is instantly filled by the rain beating the earth into it, and the stalk secured as far as it has gone; another blast forces it still lower, and the same effect succeeds behind it; when the storm is over we find the stalk fixed precisely at that point of depression at which the hardest blast of wind left it after the hill became wet. This is the present *improved* mode of hilling corn.

Let them reflect on the present mode of *supporting* their *stock*, which is principally from the *corn-house;* by neglecting the culture of *grasses*, the flock is maintained (if well maintained) at more than *double* the *expense* that it might be by a proper attention to grass; and the land at the same time reduced to *poverty*, that would otherwise be *enriched* by such attention.

Now my friends, view yourselves impartially in the mirror thus held up to you, and I believe you will cease to wonder that you have not long since discovered the advantages of *deep ploughing*."

A Hint on Melon Culture.—I have always been much troubled with the melon bug, and resorted to lime, ashes, pepper, &c. to destroy them; when calling upon a friend of mine, I found his vines in the most flourishing condition, and asking how he got rid of the insects, he answered, "Does thee see those radishes covered with bugs?" I said, "Yes." He continued, "Melon bugs like radish tops better than melon vines." I therefore always plant a few near the canteloupe hills, and hence the fine condition of my vines.—*Germantown Tel.*

Scours—Treatment in Young Colts.

Colts frequently take the scours when quite young, and if they are not relieved, a few hours will sometimes carry them off. This complaint may be induced in different ways and may be traced to different causes. Exposure in bad weather, getting into deep and cold water, or anything of a like nature, may cause a colt to take cold; and it will often manifest itself by running off at the bowels. A mare may be overheated, and if her colt is allowed to suck before she cools, it may be affected immediately. Too great a flow of milk at first sometimes causes the colt to scour, and it is not unfrequently the case that there is something in the *nature of the milk* that is too relaxing.

There are many preparations that are effectual and good. I do not propose any *new* remedy; but the point to which I wish to direct attention is the fact, that if the cause is in the milk (except in cases of over-heating,) the mare must be doctored instead of the colt. It would be just as well to pour cold water on a stump as to drench the colt when it is the too great laxative properties of the milk that is causing the trouble. This I have learned from experience. I once drenched a colt three times a day for near two weeks (the longest time I ever knew one to be bad and yet recover) with almost everything I could think of, or my neighbors recommend, and finally the idea occurred to me that I might effect more by giving the mare something. Accordingly I cut up a feed of oats, mixed it with ship stuff, and wet it with a decoction of white oak bark, boiled down very strong. One feed effectually cured the colt. Since that I have found no difficulty; adopting this course when the milk was the occasion of the trouble, or drenching the colt a few times if it had taken cold or sucked when the mare was too hot.

It is better not to check the bowels too suddenly.

I might take occasion to say in this connection, that the use of white oak ooze is sometimes quite beneficial when fattening a horse. It is proper, in order to succeed in this particular, to keep the bowels *rather open*, but in case they become *too loose* by the use of a good deal of wheat bran, or very rich grass, it is a material advantage to mix a feed of oats occasionally with the ooze prepared from oak bark.—*Valley Farmer.*

Be thou diligent to know the state of thy flocks, and look well to thy herds; for riches are not forever.

H. T. B. visits John Johnston.

On the shore of a beautiful lake—you're badly mistaken if you think I am going to write a *romance*—lives John Johnston, the Farmer. He was born seventy years ago, in the south of Scotland.

"Blood will tell," undoubtedly, for Mr. Johnston reproduces the remarkable zeal of his grandfather and his father, in behalf of agriculture and agricultural improvement. Several years of his early life were spent with his grandfather, who rented a large farm, and conducted it with marked ability; here he took his first lessons in draining land, high feeding, and progressive farming generally—lessons he has shown no disposition to forget.

After renting and managing a farm on his own account for a few years, Mr. Johnston removed with his family to America in 1820. He came near purchasing a farm at Rochester, N. Y., but missed that chance, as many others, to their subsequent regret, have done, and purchased three miles from Geneva, N. Y., on the eastern shore of Seneca Lake, where he has ever since resided.

Mr. Johnston's "worldly goods" now consisted of $1200, which he paid out for one hundred and twelve acres of land, partly cleared, nearly destitute of buildings, and *no way implicated in fancy farming*. He was now forced to run in debt for his outfit to the amount of some twelve hundred dollars. This, with the cost of his improvements, it may be well imagined, gave him some uneasiness, and taxed his energies to the utmost. His "*theory*" of farming was now to be put to a severe test. Others might indulge their *fancy*—he must make farming *pay*. He had been forewarned by a prominent citizen that "*nobody can make money by* FARMING *in these parts*—the only way to do that, is by the *rise of land*,"—a theory unfortunately pervading many new countries.

Mr. Johnston was now fairly in the *field*. The success which attended his efforts—his prominent position before the agricultural public, as the advocate of "high farming," justify some personal details. His history throws light upon a problem of vital importance to thousands who wish to know how a farmer in moderate circumstances can pay off his debts, rise to competence, and—if such a thing should seem to be necessary—to affluence.

First—he was industrious. When he went to see a Geneva banker, he found him in bed.—However, he gives it as his mature and deliberate opinion, that those who would do the most work should work ten hours a day, take their rest regularly, and plenty of it—an opinion in which I most heartily concur. Impaired energy, incurable disease, premature death, follow attempts to do too much.

Second.—He did his work well—ploughed deep for those times, and turned the sod well over.

Third.—He saved his manure, and applied it—which all farmers did not do in those days, if indeed they do now. Observing that one of his acquaintances neglected to cart out his manure for several years, Mr. Johnston told him one day that for a moderate sum he would take his manure off out of his way, and clean up his yards handsomely. The owner of the manure considered it, said he thought the price asked was *reasonable*, and he would be glad to give it, but was afraid his neighbors would laugh at him. Mr. Johnston waited a little longer, and so did the manure; he then said to his acquaintance: "Really, that manure is a very great annoyance to you, I will not only take it out of your way, but I will pay you $50 for it." The owner now began to think that if Mr. Johnston could afford to pay $50 for it, and draw it, it must have some positive value, and he could afford to cart it out on his own land. Accordingly he commenced drawing it at once.

Fourth.—Mr. Johnston pulled his stumps. At the cost of about 18 cents apiece, he removed some two thousand stumps, believing that it would cost more to work round them and lose the land they occupied, than to remove them.—He employed a machine for that purpose.

Fifth.—We now come to what makes Mr. Johnston's experience particularly valuable to American farmers. While he was still under the necessity of husbanding his resources, and could not afford to misapply a dollar, he commenced *tile draining*, and continued it from year to year, till he expended more than *five thousand dollars*, and laid more than *fifty miles of drains*. No sooner had he pbrchased a farm than he sent to Scotland for model tile; these he took to sundry brick makers, who were unable to copy; he then applied to a manufacturer of earthen ware at Waterloo, N. Y., who said he could make the tile, if Mr. Johnston could afford to pay his price. Three thousand tile were engaged, at $24 per thousand, which was cheap enough, as they had to be molded by hand. Mr. Johnston used these with satisfactory results. He then told the manufacturer that he would pay him $16 per thousand for ten thousand. The manufacturer took time to consider, and subsequently informed Mr. Johnston that he would furnish the tile, as he had invented a machine for molding them.

Mr. Johnston afterwards agreed to take all the tile he could make, at (I think,) $12 per thousand. This was the origin of tile making in America—there are now five establishments in full blast in Mr. J.'s vicinity. Mr. Johnston's services as the pioneer tile drainer of America are highly appreciated. It is not long since several eminent agricultural gentlemen of this State—including Colonel L. G. Morris, Erastus Corning, James S. Wadsworth, Horace Greeley, Luther Tucker, D. D. T. Moore—presented Mr. Johnston with a magnificent service of plate as a token of their appreciation. I will not say Mr. Johnston is proud of it, but I will say, he has a right to be!

Sixth.—Mr. Johnston, by a liberal application of lime, salt and plaster to his land, has done much to demonstrate their value. He first applied lime to a half acre of wheat—thought he could discover a difference in the fall, but in the spring, soon after the snow left, he could see where the lime was put very distinctly; took many friends to see it during the season, and when he harvested it, found that his limed land gave him twice as much wheat as the other.—Encouraged by this experiment, he borrowed money of a friend and purchased a whole lime kiln at nine cents per bushel, and applied it at the rate of eighty bushels per acre. Such a liming will last, he thinks, five or six years. His soil is a clay loam, and is not benefited by ashes; but he is a decided advocate of salt, which he applies at the rate of 300 or 400 pounds per acre. He also makes a free use of plaster upon his grass ground.

Seventh.—Mr. Johnston's advocacy of high feeding is well known. He feeds large quantities of *oil meal*—sometimes as many as fifty tuns in a winter—buys coarse grain, but never sells any. In this way he makes abundance of good manure for the farm, and has the best animals for market.

Mr. Johnston claims to be no theorist; he recommends what he has tried, tells what he knows, practices what he teaches. It may be proper to observe that he not only made his farm support itself, but pay for the improvements, and for several additions to it, which from time to time he made.

I may mention here, that Mr. Johnston sat up up a threshing machine about 1822, believed to be the first threshing machine in America.

I cannot, in justice to agriculture, second to no earthly interest, close this notice of one of its most enlighted, enthusiastic and efficient promoters, without claiming for him the respect due to eminent services. Whether judged by his zeal in a good cause, his energy of character and force of will, or by the results of his labors, he is entitled to rank among the distinguished of mankind. Not claiming the discovery of new principles or processes, he has seized with a vigorous understanding, and a determined purpose, upon cardinal points in husbandry, and while American farmers denied, doubted, or delayed, he pushed boldly on, reducing *theory* to *practice*, and forcing acquiescence by the logic of facts. His celebrity has imposed upon him a large correspondence from every section of our Confederacy, (the South included,) which he conducts with admirable promptness and patience. He gives advice, and answers questions, in all departments of practical life. Active and healthy, we hope he may long be spared to his family, his friends and his country.—*Rural N. Yorker.*

Whitewash.

This is a subject upon which our farmers require "line upon line and precept upon precept." Whitewash is one of the most valuable articles, when properly applied. It prevents not only the decay of wood, but conduces greatly to the healthiness of all buildings, whether of wood or stone. Outbuildings and fences, when painted should be supplied once or twice every year with a good coat of whitewash, which should be prepared in the following way:

Take a clean, water-tight barrel or other suitable cask, and put into it a half bushel of lime. Slake it by pouring water over it, boiling hot, and in sufficient quantity to cover it five inches deep, and stir it briskly till thoroughly slaked. When the slaking has been effected, dissolve in water, and add two pounds of sulphate of zinc, and one of common salt. These will cause the wash to harden, and prevent its cracking, which gives an unseemly appearance to the work. If desirable, a beautiful cream color may be communicated to the above wash, by adding three pounds of yellow ochre, or a good pearl or lead color by the addition of lamp or ivory black. For fawn color, add four pounds umber—Turkish or American—(the latter is the cheapest)—one pound Indian red, and one pound common lampblack. For common stone color, add four pounds raw umber, and two pounds lampblack.

This wash may be applied with a common whitewash brush, and will be found much superior, both in appearance and durability, to common whitewash.—*Telegraph.*

To Make Seeds Grow.

Many of us find a great difficulty in raising seeds of flowers, fruits and vegetables, and yet, if the seed is good, there is no reason why it should not grow.

"It is necessary first to be sure your seed is good. This is ascertained by dividing a few of them. If the kernal shows no sign of having shrivelled, is plump, and bright, and solid, it is good. Most seeds, such as pines, have naturally a bright ivory look when good, as soon as they lose the germinating power they become of a yellowish tinge; when like this they may be thrown away without the trouble of trying them to grow. Others, such as buckthorn, and most seeds whose plants yield dyes, have the seeds tinged with the same colors as the dyes produced; when bad, these colors are of a blackish or brownish hue, and a little experience readily detects their worthlessness. Then, again, seeds that have no feathery or woolly appendages will sink in water when sound. All seeds that swim are not bad, but all that sink are certainly good in any case, and are well worthy of whatever care we may wish to bestow on raising them.

Having got good seeds, to grow them is easy. They must have moisture to soften the outside skin, and perhaps to afford some of the elements of growth or nutrition; they must have plenty of air, as its oxygen is necessary to destroy some of the parts of the seed, and life only exists by the destruction of other organized matter; and it must have absolute darkness, for light is a fixer of carbon, a hardener of the parts of vegetation which it is the object of successful seed-growing to loosen and make soft.

If seeds could be always sown at the moment of gathering, difficulty would not often be experienced in germination, but as they have to be preserved, light and dryness harden the shells of most seeds. Waxy tissues become as horn, horny ones as bone, bony ones as flint, and sometimes they become so hard that, in some instances, as in Nelumbiums that were some years old, I have had to file holes in the seeds till my wrist ached before I could get a successful growth. In hard or flinty seeds artificial means must be resorted to to soften this unnatural hardness before growth can commence. Large seeds may be filed or cracked, and smaller ones may be soaked in warm water for a short time, or suddenly scalded in very hot water, or steeped in solution of potash, or any material of a softening tendency.—But I seldom have to resort to any of these extreme measures. My usual plan is to sow anything I get as soon as I get it. I do not cover the seed with soil, or if I do think it necessary in some instances, I cover very slightly and with some material that is very porous and that will admit all the air possible. Then I set my pots in a dark place, that is moderately damp and warm. On the first sign of vegetation, the pots are gradually brought up to the full light, and to their regular conditions of growth."

But, said we, this is all very well for gardeners who have greenhouses, and rare seeds to raise; but tell us something that will benefit our lady readers, many of whom have such poor luck, as they say, with their flower seeds sown in early spring.

"They cover them too deeply," replied Jones, "the moisture they get is not in proportion to the air about them—too much of the former, too little of the latter—let them sow them on the surface, and cover with moss, or leaves, or cotton, or anything, taking care only to remove it at once on germination, and they will never fail if the seed is good."

For the benefit of our nursery readers, we concluded to press our friend's experience still further, and we said, "Mr. Jones, how would you treat fruit seeds, hedge plants, &c.? I should like to add something to your hints for the especial benefit of the trade." But here we made a mistake, which we discovered on the instant of passing the word *trade* from our lips. "The trade?" said he, "let the trade study and pay for their education in the same way that I did." We told him that they were willing to pay and did pay for any information they got, as he would find if he would read the *Gardener's Monthly* regularly; that a great majority of the best minds amongst them had already given freely from the stores of their studies and experience in return for what hints they got; that more would do so when his liberal example came before them, and that moreover, and above all, he had promised me, at the outset, to tell me what would benefit "all," which includes the "trade." "Well," said he, "I will answer your inquiry by an anecdote. Some years ago, when Osage Orange seed was high in price in this section—$24 per bushel—I was, one day, in a seedsman's store in this city, and in the course of conversation, the proprietor said to me, 'Mr. Jones, I wish you could tell me how to make good Osage Orange seed out of bad; here is a lot I have had on hand for two years, and I am afraid my reputation will suffer if I sell it.'—'Let me see it,' says I. On cutting open a few seeds, I found that it was good. 'What will you take for it?' I asked. 'Glad to get $12 per

bushel for it,' he replied, and at that price I bought the lot. This was, I think, in February. I put a large packing case under my greenhouse stage, mixed a good quantity of sand with the seed, put it in the case, and watered the whole with warm water. Every few days with a spade I turned over the whole mass, to be sure that it did not ferment or rot too soon or without my knowledge, and by the middle of March, every seed had a nice little point bursting through the outer skin, when it was soon after sown, and I had the pleasure and profit that always results from a good business operation, the following fall. All seeds are governed by similar laws, which only require varying a little with different seeds; the principal variation being that the thicker the shell or harder, the more air, darkness and moisture it will require to soften it, and when it is thin or soft, very little, if any, previous preparation will be necessary. Let your nursery friends never bury their seeds deeply, but as moisture must be retained, and shallow covering thus be an evil, let that be remedied by precautionary measures—as to time of sowing, covering with porous matter, and so on."—*Gardener's Monthly.*

Flowers and Fruits.

Our hearts go out spontaneously to the garden, as these gladsome days return. The esthetic nature of man craves communion with flowers.

We doubt if any means of educating and refining the taste of children is more potent than the flower garden. There is cultivation of mind and heart in the care of these beautiful plants. We know that many despise the flower border because there is no pecuniary profit in it. They can understand the language of clover heads, and red-top, of the spikes of maize and the potato vines, for these products of the soil will sell in the market. "But what is the use," say they, "of your pinks and roses, jonquils and tulips. They look well enough, but won't fetch a red cent."

And it is because they look well enough, that we would have flowers around every farmer's house. Pray, what has the Creator given us eyes for, and a sense of the beautiful, if they are not to be gratified? Roses are certainly more beautiful than red cents, and, if they have the opportunity, the hearts of our children will go out after them more spontaneously. No wise father will grudge the labor and expense necessary to form these cheap bonds of virtue around his home.

The seeds of the annual flowers are purchased for a trifle, and the bulbs, and roots, and shrubs, in this age of nurseries, are within the reach of most thriving farmers. Make a beginning this spring, and let your son, when he goes forth to seek his fortune in the world, have occasion to remember "his mother's rose-bush." While that is striking its roots, his heart will go down into the soil of his birth-place, with a depth and fervor of attachment that new scenes will never eradicate. While flowers bloom, the picture of his early home will grow brighter in memory.

But if we submit the garden to the test of utility, we have the strongest inducements to cultivate it. It is a school of industry for both boys and girls, forming habits of systematic labor, and making work attractive by the pleasures that accompany it. Almost any child will dig in the soil for the sake of beautiful flowers and fine fruits. These habits formed in our early years, abide with us. They lay the foundations of character, and are worth more than gold.—The boy that learns to love work under ten years of age, has a fortune in that habit, useful for all after life.

The garden is not to be despised, as a means of family support and comfort, and of profit as well.

A family of the average size may have half its table expenses met by a well cultivated garden. Here is asparagus, pie-plant, lettuce and other salads already in profusion. A little farther on in the season, the ground grows red with strawberries, and all the smaller fruits hang temptingly from the boughs. Here are peas, beans, and green corn, beets, onions, and tomatoes, okra, egg-plant, and celery, squashes, melons, and the larger fruits of autumn. It were a long catalogue that embraced all the delicious vegetables and fruits that a well-appointed garden produces.

There is health as well as economy in the cultivation of these articles. There can be no doubt that, as a nation, we live far too largely upon meat. Were fruits and vegetables as common as they ought to be upon the farm, this evil would be remedied. Children and almost all adults of unperverted tastes prefer a large proportion of this diet; and it is owing mainly to the fact that gardens are neglected, that salt junk and johnny-cakes, hog and hominy, reign supreme upon so many tables, for the larger part of the year.

Consecrate a few square rods to the spade and the garden rake, and let Flora and Pomona henceforth be numbered among your household gods.—*Agriculturist.*

Deficiencies in Dairying.

The following article is copied from the London *Agricultural Gazette*, to show that there is room for improvement in the quantity as well as the quality of the butter and cheese we obtain from the milk of our cows:

"If you analyze an ordinary sample of cow's milk, you may probably obtain nearly four per cent. of butter, quite four per cent. of casein, four or five per cent. of sugar, and 88 per cent. or thereabouts of water. If your cow yields, as it is probable she does, 6,000 lbs. weight of milk per annum, then you obtain from her, according to this analysis, 240 lbs. butter and 240 lbs. of casein. But now, analyze and weigh the actual produce of your dairy. Let us suppose you are a Gloucestershire dairy farmer, and that you make 400 lbs. of cheese and 50 lbs. of butter from your cow per annum. This is not a large, but it may be considered an average return.—That cheese, according to Prof. Johnson, contains 38 per cent. of casein and 22 per cent. of butter, or in all 152 lbs. casein and 88 lbs. of butter, besides other ingredients, water, salt, &c. That butter, again, according to Prof. Way, contains 80 per cent. of pure fat of butter, and three per cent. of casein, or in all 40 lbs. of butter and 1½ lbs. of casein, besides other ingredients, water, salt, &c. Now add the ingredients thus ascertained together, and you find that you have had from your cow during the twelve months, as the produce of your dairy, 153½ lbs. of casein and 128 lbs. of butter, instead of 240 lbs. of butter and 240 lbs. of casein, which according to analysis your milk contained.

What has become of the remainder? It is a question of the very greatest importance to all dairy farmers. So great a loss is enough to startle them, and most people will be inclined to doubt it. It must be admitted in reply to these that the analyses here quoted are not as they would need to be if all questions are to be silenced—analyses month by month of the milk whose actual produce for the year is here named. But they are the average of a number of examinations of ordinary samples by good chemists; and the composition of the cheese and butter quoted is also probably not far from the truth. It must also be admitted that there is other besides dairy produce obtained from the milk of the cow. Pigs are fattened on the whey, but no farmer will admit that there is enough bacon thus made to correspond to anything like the loss thus indicated of the butter and the cheese of milk.

Such a loss, amounting to full one-third both of the butter and of the cheese contained in the milk, is certainly not made up by the bacon fattened on the whey; and if, as we must suppose, the missing ingredients do escape in the whey, then the pigs fail nearly as egregiously as the dairy-maids in saving all the valuable ingredients passing by them in the liquid which they deal with.

Let us add that the averages here spoken of are not quoted at random. They correspond very closely to the figures given as his experience by Mr. Harrison of Frocester Court, Gloucestershire, who has the credit of having first called attention to the loss which, according to analysis, thus takes place in the dairy. In a little Handbook of Dairy Husbandry, published last year, his figures are communicated by him thus: In 1857, fifty-five cows were milked; they yielded 31,700 gallons, or 321,000 lbs. of milk, besides rearing forty-three calves. From this quantity of milk, 25,424 lbs. of cheese and 3,466 lbs. of butter were made. Now the milk contained by analysis, according to Mr. Harrison, 12,480 lbs. of casein and 11,556 lbs. of butter, whereas the cheese and butter contained by analysis only 9,765 lbs. of casein and 8,366 lbs. of butter, leaving 2,715 lbs. of casein and 3,190 lbs. of butter unaccounted for.

No wonder that great interest is taken in the dairy researches in which Dr. Voelcker is engaged for the Royal Agricultural Society of England. We are glad to find from a lecture lately given by Mr. Harrison before the members of the Vale of Berkeley Farmers' Club, that these researches are likely to result in some useful conclusions. Mr. Harrison said:

'There is undoubtedly very great room for improvement even in our very best dairies, and to prove that this is not mere assertion, but really the case, I am permitted by Dr. Voelcker, who is now engaged in an investigation of cheese-making for the Royal Agricultural Society, to mention a few general results at which he has arrived. The investigation, he says, in a great measure confirms the result I have arrived at from a study of my own dairy produce, viz: that nearly 25 per cent. of the casein and butter which go to form cheese pass off in the whey; in fact, that could we completely extract these from the whey, where we make three cheeses now we should nearly make four. Of course the pigs would suffer; but the cheese would be much more valuable could it be extracted as food for man, than, as now, in the whey for pigs. Dr. Voelcker says further, he thinks it may be extracted. The results of Dr. Voelcker's experi-

ments will probably show, that as there are very many different methods of cheese-making, so are there amazing differences in the composition of the cheese made. At the end of September he had analyzed 48 different cheeses, and he found the quantities of water in them vary as much as 16 per cent., being in the maximum quantity about 4-410ths of the whole. He has found as much difference as 16 to 20 per cent. in the quantity of water in the curd, when finally ready to place in the press, and there is little doubt that this great difference considerably affects the quantity of the cheese when fit for market.'"

Planting Trees.

Deep planting is one of the greatest evils to which trees, especially fruit-bearing ones, are subject. No tree should be planted deeper than it formerly grew, as its roots are stifled from the want of air, or starved by the poverty of the soil at the depth at which they are planted. It is much the better and more natural process, to plant the tree so that it shall, when the whole is complete, appear just as deep as before, but standing on a little mound two or theee inches higher than the level of the surrounding ground. This, when the ground settles, will leave it level with the previous surface.

Nothing is more common than too deep planting, and the temptation to it is greater, because deep planted plants, from having their roots more accessible to moisture, are more certain of growing the first year, and are less in want of mulching to exclude the heat and drought, and of staking to prevent them from being moved by the wind. Deep planting, by placing the roots almost beyond the reach of solar influence, retards the growth in spring, and continues it so late in autumn that the wood and buds are seldom properly ripened; therefore, in cold and wet climates, deep planting should be avoided, as tending greatly to increase the evils such climates are known to possess.

Many excellent cultivators, with a view to keep the roots of their trees near the surface, that they may be within the reach of solar influence, and often to prevent their entering into bad subsoil, plant on raised mounds or hillocks. In this, so far as fruit trees are concerned, and also where the soil is naturally damp, or rendered so by a wet climate, they do well, because it is the most economical way of finding a good substitute for a bad soil, and in many situations it is wise to have recourse to it. This need not, however, be carried any further than to set the roots upon the natural level of the surfaces, covering them sufficiently with good soil, which will, for all ordinary purposes, be found sufficient.

No man has had greater experience, or has succeeded better in the removal of trees, than Mr. Barron, of Elveston. On mound or hillock planting, he says, "Much advantage would be gained in every way by placing the tree on the surface of the ground, and by adding soil for the roots to be planted in. By this means the roots instead of being cramped in a pit, and arriving speedily to the subsoil, have the depth of the natural soil to sport in, besides the free access of the air is secured. The trees when planted, have on this plan the appearance of being placed on raised basis, and by this means height is gained."

This opinion is founded on sound practical experience, and proves to us its advantages by reason of its enabling us to add with so little trouble to the extent of root pasturage, if the object aimed at be bulk of timber, as well as circumscribing the range of the roots, keeping them from penetrating a bad subsoil, and above all elevating the temperature around them, if the object be healthy and productive fruit trees.—*Book of the Garden.*

Charcoal and Some of its Uses.

There are various opinions afloat in regard to the value of charcoal as a fertilizer. As an absorbent of ammonia, carbonic acid, &c., it certainly has scarcely a superior. It is also pretty well ascertained, that it readily yields up for the use of the plant, the substances thus absorbed. But there are two features connected with its use which have always commended it to my favor. One is its mechanical effects upon the soil, rendering it more open and friable, and consequently more easily worked, and more open to the action of the atmosphere. The other is the warming effect produced where it is applied in any considerable quantity. A dark soil, we all know, has the power to a greater extent of absorbing heat than a light-colored one. This, in many locations, is a great desideratum. Many plants which it is desirable to grow, but which, for the want of a sufficiently warm soil, is next to impossible, may be cultivated by the use of charcoal. Its carbon yields no food to plants, consequently, even if applied in large quantities, it can do no harm, unless it renders the soil too light and open; not a very likely result.

In gardens, therefore, I esteem it highly, and have found it, for the purposes briefly named above, most excellent.—*Farmer and Gardener.*

A good mother is worth an army of acquaintances.

Club-Root in Cabbage.

BY A JERSEY MARKET GARDENER.

It is just as much the province of a horticultural journal to disabuse the popular mind of an error, as it is for it to advance a new or improved system of culture. One of the most general and deep-seated of these errors is the notion that the cause of this troublesome feature in the culture of the cabbage crop is in consequence of using hog-manure as a fertilizer.

I will briefly state a few facts why we consider this a radical error. In the district from which I write, I presume there are at least two hundred acres annually under cabbage crop, embracing every variety of soil, from light sand to deep clayey loam, and yet in every case we have "club" if we plant cabbages on the same ground two years in succession, *except on lands wherein the soil is impregnated with oyster shell;* there we may plant successively for fifty years and never see it, and that, too, without any restriction about manure. On the other hand, I have (for convenience) used cow-manure solely on one of my places, and in another, horse-manure, largely mixed with hog-manure; and yet, whenever we, by accident or otherwise, transgressed the rule of planting only in alternate years, just so sure were they affected by club-root, in both places alike. This, of course, only on ground where there was no oyster shell deposit.

Reasoning from these facts, our theory is, that an insect is in some way attracted by the cabbage plant when growing the first season, but is then powerless to injure; but that it then deposits its eggs in the soil, which forms the insect ready to attack the roots on being planted the succeeding season. We cannot vouch that the above is correct, but the facts seem to point to no better solution. We explain the exemption from club-root in soils containing the deposit of oyster shell by the belief that the insect can not exist in contact with lime; therefore we have long since come to the conclusion that the reason of club-root in cabbage is solely caused by *an absence of lime in the soil.*

Being so thoroughly convinced that the above is the only and true cause of annoyance, we have for the two past seasons used lime extensively, (at the rate of one hundred bushels *unslaked* oyster shell per acre,) and the results, thus far, convince us that there is no doubt that we can thus artificially form a soil where cabbages or cauliflowers can be grown successively, without the attendance of their destructive enemy, club-root.

The successful growing of this crop in this district is of more importance than many are aware of. The two hundred acres annually devoted to cabbages, will average five hundred dollars per acre, or something near one hundred thousand dollars for the whole. This is only from one Jersey district. New York island and Long Island, I presume, will figure up as much more.

I hope I have not forestalled my quondam friend, Mr. Roessle, of celery renown, in divulging his "secret" of "how to grow a cabbage crop without club." But he seems to be so long in thinking about it, I was afraid the "interested" public would be getting impatient, and so let the cat out of the bag; but whether or not it is his "cat" I am unable to say.

[We think it has been sufficiently demonstrated that the "club-root" or anbury is caused by a species of curculio, and that hog-manure has nothing to do with it. Such being the case, we should naturally expect "club-root" to prevail in proportion to the number of years cabbages are grown on the same piece of ground; provided no suitable remedy is applied. "A Jersey Market Gardener" here tells us that *shell lime,* according to his experience, is a certain remedy, and, knowing him as we do, we have the most implicit confidence in every word he says of his own knowledge. The announcement of a sure remedy for this formidable disease will be of incalculable value to a large class of our readers. Whether he has forestalled Mr. Roessle we can not say; but, Mr. Jerseyman, when you undertake to play with "cats" you must look out for a "scratch."—*Editor Horticulturist.*

MANURES IN ENGLAND.—Prof. Anderson gives the following estimate of the amount expended annually by the farmers of Great Britain for artificial manures:

Guano	$12,500,000
Nitrate of Soda	1,125,000
Bones	1,200,000
Superphosphates	2,100,000
Coprolites	1,875.000
Sulphate of Ammonia	750,000
Other articles	500,000
Total	$20,050,000

This expenditure, coupled with improved methods of tillage, account for the fact that the average product of wheat in England has been raised from eight or nine bushels to nearly thirty bushels per acre.

The sluggard will not plough by reason of the cold; therefore shall he beg in harvest.

Meteorological Observations *kept at Schellman Hills, Carroll Co., Md., Sykesville P. O.,* MARCH, 1861. (*Reported for the American Farmer.*)

Day	THERMOMETER.				WIND.			RAIN	REMARKS.
	7 A. M.	2 P. M.	9 P. M.	D'y Mean.	7 A. M.	2 P. M.	9 P. M.	Inch's	
1	53	70	58	60½	S.	S.	S.W.	.....	Clear.
2	59	75	63	65⅝	S.W.	S.	S.W.	.....	Clear.
3	53	76	65	64⅝	S.W.	S.W.	S.W.	.....	Clear.
4	53	56	45	51½	W.	W.	W.	.....	Cloudy; clear; crocuses and violets in bloom in
5	32	38	24	31½	N.W.	W.	W.	.....	Clear. [yard.
6	24	43	37	34½	S.W.	S.W.	W.	.....	Clear; cloudy.
7	20	31	23	24½	N.W.	N.W.	E.	.....	Clear.
8	25	50	43	36	S.E.	S.E.	S.E.	.....	Cloudy.
9	49	40	35	41⅝	S.E.	W.	W.	1¼	Rain began 6 A. M., end 12 noon; clear; 7½ P.
10	33	35	30	32⅝	W.	W.	S.W.	.....	Clear. [M. an Aurora Borealis; end 10 P.M.
11	25	38	28	27	N.W.	N.W.	S.W.	.....	Clear.
12	30	55	46	43⅝	S.W.	S.	S.E.	.....	Clear; cloudy.
13	50	60	47	53½	S.W.	W.	W.	.....	Cloudy.
*14	35	34	25	31⅓	N.E.	N.E.	N.W.	.....	Cloudy; 7 P.M. snow, end 8 A.M.—¼ in.; snow
15	26	34	34	31½	N.W.	N.	N.W.	.....	Cloudy. [4 P.M., end 10 P.M.—1 inch.
16	32	56	50	46	W.	S.W.	S.W.	.....	Clear.
17	45	40	30	38½	W.	N W.	N.W.	.....	Cloudy; clear.
*18	19	28	18	21½	W.	N.E.	N.E.	.....	Cloudy; snow 6 P.M., 9 P.M. end—¼ inch.
19	15	33	24	24	N.	N.	N.E.	.....	Cloudy; clear; 6 P.M. wild geese passed to N.
20	21	45	37	34½	N.E.	S.E.	S.E.	.....	Clear.
*21	25	35	25	28	N.W.	N.W.	N.W.	.....	Cloudy; snow in the night—¼ inch.
22	27	45	30	37½	N.W.	W.	W.	.....	Clear.
23	30	57	47	44⅝	W.	S.E.	S.E.	.....	Clear.
24	40	49	39	46	S.W.	W.	W.	.....	Clear.
25	37	38	45	46⅝	W.	S.	S.E.	.....	Clear.
26	53	65	62	60	S.E.	S.	S.E.	.....	Clear.
27	55	60	45	53½	W.	W.	N.W.	¾	Rain; clear; began to rain in night, 1 P.M. end;
28	44	56	45	48½	W.	W.	W.	.....	Clear. [1 P.M. thunder; hyacinths in bloom.
29	40	65	50	51⅝	S.	S.E.	S.E.	.....	Clear.
30	56	60	41	52⅓	S.	W.	N.W.	.....	Clear.
31	34	50	36	40	N.W.	S.E.	E.	.....	Clear.

* 2¼ inches Snow fell. Monthly Mean, 42. 2 inches Water fell.

HARRIET M. BAER.

Corn and Cob Meal Not Injurious to Animals.

For several years past there has been much much said and written, favorably and unfavorably, on grinding corn in the ear as food for stock. I have been both amused and disgusted at the recital of stories told and read by individuals.

I have fed corn and cob meal, more or less, to horses, cattle, sheep, and hogs, in various forms, at all seasons of the year, for some six years, and have never seen any evil effects resulting therefrom. But on the contrary, have found it to be a saving of about one-half of the grain fed in the ordinary way, and more, if properly cooked and care be taken in feeding. I have fattened cattle, hogs and sheep in half the time I could on whole corn, and frequently in the coldest weather, when whole corn would not more than keep them in living order. When ground fine, I consider it better for stock than meal ground from shelled corn. It lies looser in the animal's stomach, and will not sour, as pure corn meal will. I will give one illustration to suffice for many, showing the fallacy of the danger in feeding corn and cob meal. Five years ago this winter I put up a poor, old work ox; fed him until spring; he was fat, but as I could not sell him for what I thought he was worth, I summered him over to the next fall; put him up again and fed him as before wtth corn and cob meal; killed him the beginning of January following. A healthier animal I never saw, and as for fatness, there was not a single half pound of flesh but what was streaked with fat. He was not a large animal, yet brought me nearly $100 in Mount Gilead market. I will give you his gross and net weight the day he was butchered. His gross weight was only a few pounds over 1,800. The meat, after the kidney tallow was taken out, weighed 1,000 pounds; the hide weighed 137 pounds; the whole of the tallow, after being well tried out, weighed 220 pounds. So you see that the meat, tallow and hide weighed 1,357 pounds, leaving a waste of only 443 pounds, not quite one-fourth. If Mr. Todd or his neighbors can beat the above, through any other process of feeding, we would like to hear from them. I will close by stating that I have horses in my possession that have been fed more or less on the above kind of food from three to five years, and my neighbors will bear me witness that few horses in the country perform more hard service. —*Louisville Journal.*

One never loses by doing a good turn.

The American Farmer.

Baltimore, May 1, 1861.

TERMS OF THE AMERICAN FARMER.

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☞ MR. WM. C. LIPSCOMB, JR., is our Traveling Agent for Maryland and Virginia.

Markets.

The entirely unsettled condition of the Markets as we go to press, render it impossible to give them truthfully—they are therefore omitted.

FUNDS.—We beg our friends whose bills may be due, to do us *the great favour* of remitting, where it is possible to do so.

War.

Our business is with the arts of Peace, but what shall we write now? War is upon us as we pen these lines. In all the trials and troubles and excitements of the six months past, our good old State has sought peace and ensued it. She has been a very suppliant for peace. With her noble sister Virginia she has waited, and deliberated, and endured, and while yet they spoke of peace, their enemies made them ready for battle. "Our chains," as in the days when Henry spoke, "were already forged—their clanking might be heard on the plains of Boston." But not forged now as then by a tyrant beyond the seas. The brothers for whom and with whom we resisted that tyranny, are they who would fetter us now. Then the rebels Adams and Hancock stood beside the rebel Washington—now Virginia's motto, "*sic semper tyrannis,*" is to be unlearned, and the "solid men of Boston" change their gold to lead and their silver to iron, sacrificing the very molten images of Yankee idolatry to their purpose; and men of "Concord and Lexington and Bunker Hill" come not as soldiers of the Government in obedience to orders, but as *volunteers;* they come of their own free will and choice; with despatch and alacrity, for the exclusive purpose of "enforcing the laws" and "suppressing combinations" in the seceded States—and not, as is now falsely claimed, for the protection of the Capitol. They have come, in other words, the first to "coerce" the South to submission, the first to dishonour the soil of Maryland by an unholy, wicked crusade against her sisters. It needed but the shedding of the blood of her citizens in the streets of Baltimore, by men engaged in such an enterprise, to awaken every son of Maryland to a realization of the crisis on which we were too willing to shut our eyes.—Now we know that the "irrepressible conflict" has come indeed, and the heart of Maryland is moved as that of one man to meet it. We rejoice to believe she is on the side of the right, and that the God of Hosts is her defender.

A War Item.

The first order given by the State and city authorities, when it was determined to stop the progress of the Northern Invaders of our soil, despatched some thirty members of the "Maryland Guard," with a body of fifty of the city police, to burn the bridges on the Philadelphia Railroad. Some seventeen hundred Northern troops were known to be on their way to the city, and our little band had orders to stop them if possible by the destruction of the bridges, but failing to accomplish that in time, to engage and fire upon them at any rate, that the citizens might have the advantage of the notice and the delay thus occasioned. Happily the troops were not on the first train of cars, as was supposed, and the work was accomplished in time to change their route. Otherwise the little band selected for this honourable service would probably have perished to a man. Our friend and colleague, Mr. Lewis, a "soldier of the Guard," was one of this chosen band; may he come as safely back from every peril.

Evans' Rural Economist.—We are in receipt of the first number of "Evans' Rural Economist," a new candidate for favour in the field of "Agriculture, Horticulture and Rural Affairs." The "Economist" is published at West Chester, Pa., by Dr. Edmund C. Evans, and bids fair, from this specimen, to prove a valuable coadjutor in the cause to which it is devoted.

Overstocking.

It is a lesson that the young farmer finds hard to learn, that an animal, plant or tree fully developed, is of more value than two or three or more of the same sort half fed and half grown. And when he brings himself to acknowledge this fact, he is constantly, in every department of his business, beset with temptation to overstock his pasture or his grounds, because he wants the heart to thin out bravely the thrifty young animals or plants, that the remainder may have room to grow. We have heard the story of two farmers who competed year after year for the premium of an agricultural society for the best crop of ruta bagas. He who failed repeatedly, thought, after watching his rival's practice, that they differed in but one point now and in this he had the advantage of his heretofore successful competitor; he thinned his crop himself, while the other trusted the important operation to a hired man. But the truth came out after, that this supposed weak point was the secret of success. The hired man not having the same tenderness for the young plants, could obey orders and thin them out with a free hand, while he who thinned his own crop wanted the heart to thin them sufficiently. There are few of us who are not conscious of this weakness. We are overstocked with cattle because we must "turn out" every good looking calf, and overrun with supernumerary horses because we won't part with a promising colt, and our thrifty little roasters tempt us into a stock of half famished rooters. We err in the same manner with plants as with pigs. We are constantly distributing the food of one between two or three, and what would prove both profitable and creditable, as applied to one, is unprofitable and discreditable when divided among a number.

Hungarian Grass.

WENTWORTH, N. C., April 13, 1861.

To the Editor of the American Farmer:

DEAR SIR: I send you $1 for the renewal of my subscription to the *American Farmer*. As a great deal has been said about the Hungarian Grass, I venture to give my experience. On the 24th April, 1860, I sowed one bushel and a peck of seed on an acre of good dry soil, and reaped therefrom, two and a half months afterwards, six tons of cured hay, including seed. From my experience I think it more worthy of patronage than any other now in use.

Respectfully yours,

HARVEY MOORE.

Trifles.

"HAREWOOD," near Charlestown, Jeff. Co., Va., April 13, '61.

Messrs. Worthington & Lewis:

GENTLEMEN: I enclose $1, my subscription for another year. My year commences April 1, but my last receipt is dated from April 1, 1860, to *March* 1, 1861—a slight mistake, cutting me short a *month*, which might as well be corrected whilst our attention is directed to it. It is but a trifle, to be sure, yet says some one—

"Think nought a trifle, though it small appear,
Small sands the mountain, minutes make the year,
Trifles are life. Your care to trifles give,
Or you may die before you learn to live."

Hoping you will excuse a plain farmer for venturing upon a poetical quotation,

I remain yours, respectfully,

GEO. L. WASHINGTON.

The above was not, of course, intended for publication, but as the ever honored name our correspondent bears is public property, we are sure he will pardon us for using it with his note, to impress on our young readers the excellent lesson imparted. Our correspondent, it will be remarked, is himself so close an observer of the injunction that he does not overlook the "trifle" of paying punctually in advance for the "Farmer." Would that old and young would profit by so good an example.—EDITOR.

Early Tomatoes.

A correspondent of one of our exchanges thinks we migh have tomatoes earlier if we kept the plants in the hot-bed later:

"This may seem a strange assertion. Never mind that, if it is true; and we know it is true. The first blossoms of the tomato, after transplanting, usually drop off, and the promise of early fruit drops with them. Let your plants for very early product remain in the hot-bed till the fruit has set on them; choose a wet time to plant them out, in May; no matter if it is late in the month—and see what the result will be. In order to make assurance doubly sure, after the plants are eight or nine inches high, put them each in a flower pot, and in transplanting you break none of the fibrous roots, and as you gradually harden your plants by leaving the frames off in mild weather, when the proper season for transplanting arrives, they will grow and thrive without any delay or drawback, owing to the change. This wilting of the plants is a loss of time, and as a few days will make a material difference, the object is to avoid it, if possible. Give it a trial."

HOUSEKEEPERS' COLUMN.

N. B. Worthington, Esq.,

DEAR SIR: If not among the most competent, be assured I am among the most willing of the readers of the *Farmer* to respond to your genial invitation promulgated in your "Housekeepers' Column" in March *Farmer*, asking our aid *"to help us out in getting up something good to eat."* Capital! The expression is itself suggestive of a volume larger than any cookery book extant, and you are certainly entitled to a first class gold medal for the idea. Do not fear, however, that, prompted by the suggestion, I am disposed to attempt the perpetration of a *cook book*. I am of that class of utilitarians who believe that odds and ends, bits, and scraps of useful information scattered promiscuously broadcast through the country, are productive of more good than all the ponderous manuals on housewifery ever published. They are invariably too learned, too elaborate; by far too extravagant in their prescriptive details for the exigencies of everyday life among those to whom domestic economy is a necessity as well as a virtue. In every cook book with which I am familiar, the invitation to extravagance is so universal, the standard of material so nicely calculated for the meridian of *millionaire* pockets, that no woman whose husband's income is not independent of *secession* panics, or government patronage, is justified in adopting them as a standard.

In almost every instance where a new, and doubtless savory enough dish, claims the suffrage of the public, the cost of its constituents, upon which depends its excellence, excludes it from the tables of those who "earn their bread by the sweat of their brow;" in view of which, in whatever I may find leisure to offer to yourself, and the readers of the *Farmer*, I shall endeavor to blend *taste* and economy, in as equal proportions as possible. There is no just reason why we should not, everywhere, in town and country, have inviting, palatable, health and vigor-imparting dishes prepared from the materials of every-day consumption, in place of the greasy, sloppy, *hotch potch* abominations so generally prevalent. In order to accomplish this most desirable end, absolute cleanliness and common sense are arbitrary requisites. I, for one, do not wonder at the editorial call for help in the culinary department, when the destruction of really good material is so generally the result of unsuccessful attempts to get up something "good to eat." Now, I have not the least objection to *blanc mange*, "chicken mullagatawny," "arrow-root drops," "whipt syllabubs," "gelatine cream" and "sponge Eugenies," but would respectfully submit that as none of these delicacies afford the stamina required to guide a plough efficiently, spade up a vegetable garden, knead a batch of bread, or even for you, Sir Editor, to write a vigorous rural editorial upon, I may hope to be permitted to offer, now and then, my homely but more substantial bill of fare. Thus impressed, I present to the readers of the *Farmer* my *Cup Cake*, *Corn Bread*, and *Baked Pork and Beans*, as I prefer them:

CUP CAKE.—First of all get a tinner to construct a cake baker, as follows: Eight to twelve tin cups, the size of an ordinary teacup, without bottoms, and flaring at top. Have these soldered in rows to a sheet of tin and the machine is perfected. By this means you insert into, and remove from the oven, all the cakes at once. Mine cost thirty-one cents, and has been used once a week for six years, and still in good condition. For the cake, one cup of sour milk, two do. of sugar, one do. of shortening, a heaped teaspoonful of saleratus, teaspoonful of salt, and grate in half a nutmeg; add four eggs well beaten, and sift in flour, stirring to a stiff batter. Put one tablespoonful in each cup, and bake twenty minutes in a moderately hot oven.

CORN BREAD.—The meal ought to be fresh ground, and coarser than that generally used. Take two cups sour milk, teaspoonful saleratus, one tablespoonful sugar, one do. ginger, teaspoonful salt, and half a cup of flour, tablespoonful lard; add the meal, stir thoroughly to a stiff batter, and bake at once, in a shallow dripping-pan, three-quarters of an hour.

BAKED PORK AND BEANS.—Have nice, clean, white beans put in soak in cold water over night. Take a piece of fat, side pork, parboil fifteen minutes; then place it in the pot with the beans, which ought to have been cooking an hour.—Boil the pork and beans together until the beans are perfectly soft, then remove them with a skimmer to the dripping-pan, and make an island of the pork, in the centre, having first cut the rind with a sharp knife a quarter of an inch deep, in delicate, parallel lines. Bake three hours in a moderate oven, and serve hot.

Having thus disposed of my first instalment, I would in conclusion remark, that although we are plain, every-day, rural people, I am very confident of my ability to *help you out* with something really "good to eat," whenever you may please to favor us with your presence; and that the invitation may not lead you a-wandering in

a labyrinth of uncertainty, I append my address. MRS. E. D. KENDALL.

Reisterstown, Md.

Mrs. Kendall has our thanks for her very friendly invitation and for her valuable contribution to the Housekeepers' Column. We hope to hear from her as often as the housekeeping and the children will allow.—EDITOR.

Covering the Earth with Straw, &c.

WINCHESTER, VA., April 10, 1861.

To the Editor of the American Farmer:

DEAR SIR: I wish to obtain some information, through the medium of the *Farmer*, that will be easy for you or some of your correspondents to furnish—and as it is the spirit of the times to put forth an *ultimatum*, I shall constitute myself a Committee of the Whole, for fear of being considered an old fogy, and report that:

Whereas it is pretty generally known as a *fact* by myself and neighbors, that covering the earth with anything, such as *straw*, *leaves*, *stone* or *plank* produces fertility; and whereas I have seen sundry plausible *theories* and *reasons* that try to account for said fertility; and whereas said theories and reasons come not within my comprehension, and were therefore inadmissible; and whereas the old *Farmer* has always given me information upon almost all subjects that came within its province, and conceiving this to be such an one—therefore,

Resolved, 1st, That I request its editor to give me a scientific reason for the *fact* that covering the earth thus does produce fertility.

Resolved, 2d, That should he refuse, neglect, or postpone giving a scientific reason or reasons from any cause, (except inability,) that I will thereupon secede, withdraw, cut loose and resume my sovereign independence, having no further intercourse with the old *Farmer, so soon as I get money enough to pay him off.*

Yours, respectfully,

H. M. BAKER.

We will answer our correspondent as well as we can:

1st. Like valorous Jack Falstaff, if reasons were as plenty as blackberries, we will give no reasons "on compulsion."

2d. We have no "scientific reason" for the fact, which would prove satisfactory, in our opinion, to our correspondent, and therefore we put in the plea of "inability" so far as he is concerned.

3d. There have been sundry theories proposed by sundry writers in explanation of "the fact," which our correspondent says are "inadmissible" because "not within my (his) comprehension." We do not express an opinion, but merely suggest that a question might possibly arise, whether this is the fault of "the theories" or the "comprehension."

4th. We repeat what we said when we commenced some four years ago the discussion of the subject of manuring on the surface—"let farmers stand by their facts." What they see with their own eyes and know of their own knowledge let them maintain without reference to theories. If we submit our judgments to the direction of those who get up the theories, as is very common among farmers, we are liable to be constantly misled, as we have all been in our practice of manuring, ignoring the facts before our eyes for fear of the theory which had taken possession of our brains. A scientific theory is usually reached only through a series of plausible guesses. In the application of science to agriculture there are so few well settled and established theories that we are very wary of committing ourselves to any of them, but would have every man keep his eyes open, and test, as far as he is able, the quality of these scientific guesses. If, as in the case of our friend, they do not satisfy him, let him abide patiently in the possession of the fact. A satisfactory theory is a very good thing, but the want of it will not justify him in "seceding."

5th. If our correspondent will "secede" nevertheless, he may go in peace. We will not coerce, shoot, kill, or damage him in any way. The working of his own farm is his own business, and if he thinks he can do without us, we will *try* to do without him.—EDITOR.

Difference in Value of Land.

To the Editor of the American Farmer:

DEAR SIR: In your March number there was propounded by "B." one of the most important questions that can be presented to the consideration of land owners. I feel assured that if the agriculturists of our country were fully awakened to its importance, that very much land now producing light crops, scarcely paying costs, would ere long be vastly improved. I have read with pleasure and profit the answer furnished by "E." in your April number; yet I think he did not fully comprehend "B.'s" object in asking the question. It appears to me that he ("B..") wants to know the *relative value* between two pieces or parcels of land, one of which *produces* fifteen bushels of wheat per acre, and is worth $40 per acre—while the other is *producing* crops of thirty bushels per acre—and wishes to convey the idea

that, having been brought to that condition (*a permanent one*, if you please,) by certain treatment, what is their *relative value*. Any other view of the matter certainly renders the question useless. In other words, his object must be to call attention to the fact that it requires nearly as much labor and expense to raise a fifteen-bushel crop as it does to raise a thirty-bushel crop, and that if, by expending ten, fifteen, or twenty dollars per acre upon it, will enable it to produce thirty bushels per acre, it will prove to be a very judicious and profitable investment; for, by adding $20 to his $40—making $60—he will have (according to "E.'s" estimate, and I think he is low enough,) increased his land in value $80. Is this fact not worthy of the closest attention of every man who owns an acre of land?

I hope, sir, that many others will favor us with their views and thereby fully *illuminate* the subject and keep it before the public mind—and, my word for it, crops will increase. The manner and mode of doing it will differ; every locality will select and use the *best* means at command. The enquiry of "B." was not made, I am sure, in reference to the Valley of Virginia, nor the Valley of Connecticut, nor that of the Mississippi, but to all arable land, wherever found. If, after giving the subject my best attention, I shall differ from "E."—i. e. from $120 per acre—you will hear from me again; otherwise not. T. R. M.

Unloading Hay.

Mr. L. F. Scott, of Connecticut, communicates in a late number of the *Country Gentleman*, his mode of unloading hay from the cart all at once, which we print now for the information of our readers, in order that it may reach them in time for the approaching haying season. He says:

"My plan is, to have two or more endless ropes spread on the cart rigging, and load on them, and when in the barn, bring the ropes together on the top, on a strong double hook made fast to a stout rope; this rope may run through tackle, with a horse outside, similar to the plan of unloading with a horse fork, while a man with a guy-rope over a pulley, back side of the mow, can direct it where he chooses. Then let down and unhook the ropes on one side, and pull them out with the same power that hoisted it. Another way, to hoist without the rope, is to have a wheel, similar to what merchants use for hoisting hogsheads of molasses and other merchandise, hung in the ridge of the barn, and operated in the same way, with guy-rope as in the other plan. Where a barn is built with the floor on one side the barn, with short middle beams, the wheel can be hung partly over the mow, so that it will need less power on the guy-rope."

[For the American Farmer.]

Dr. Baldwin's Shade Theory.

Can earth itself experience a chemical change? Scientific gentlemen, to whom this question has been submitted, unhesitatingly pronounce the earth incapable of experiencing a chemical change, being an inorganic substance. With the utmost deference to scientific attainment, I must be permitted to remark, that I do not consider any opinions truly scientific which are contradicted by plain common sense facts. That the surface of the earth itself will experience a most remarkable change when closely covered for some time with any substance whatever, is a fact now too familiar to practical farmers to admit of further controversy. It is found changed in color, consistency and qualities; from being white it becomes a dark chocolate color; from being hard and stiff, it becomes light and pulverulent, and from being poor it becomes rich. This necessarily implies a chemical change, because there must be a new arrangement of the elementary principles to constitute a difference in the *qualities* of any substance. I believe, therefore, that the earth itself can experience a chemical change. I say the earth itself, because if deprived of its vegetable and animal matter by combustion, it is still subject to the same process. To ascertain the nature of this chemical change, it is necessary to observe the circumstances to which the earth is subject when closely covered; it is in a cool, close, dark and damp location, with a contact of air—the same circumstances precisely which are indispensable to generate that peculiar chemical process by which all vegetable and animal matter is converted into manure. The circumstances being similar, and the products of similar qualities, prove conclusively the identity of the chemical process, therefore the earth will experience the process of putrefaction.

This residue of the putrefaction of the earth itself, is that substance which for centuries has elicited the attention of scientific agriculturists. They denominate it "the great fertilizing principle of the earth, without which neither vegetable nor animal life can exist;" it is termed "vegetable earth," "mould" and "humus."—The definition, vegetable earth, was given to it under the impression that it was the residue of the decomposition of the covering substances. This is, in my opinion, an egregious error, for reasons which follow. First—it is manifestly earth. Second—it can be as readily made by substances which are not decomposed as by those substances which suffer decomposition. Third

—the trifling residue of vegetable matter decayed upon the surface does not possess fertilizing qualities. Fourth—it contradicts an admitted truth, that no one natural body can be converted into another by any process—therefore earth cannot be converted into wood nor wood into earth; they are distinct and peculiar creations.

Infinite wisdom is exhibited in the provision for the removal of all dead vegetable and animal matter from the surface of the earth by a distinct and peculiar chemical process. By this process (eremacausis) the most solid timber and the hardest bones are slowly and effectually consumed, and in the form of gas diffused through the atmosphere, whilst the earth beneath them, by the process of putrefaction, is converted into mould, food for succeeding vegetation of a more luxuriant growth. If all vegetable and animal substances decayed upon the surface of the earth, were converted into manure by the putrefactive process, the discover of this Continent would have found a soil as desolate and as destitute of vegetation as the guano islands—for it is a well known fact that a surface covering of manure a few feet deep will most effectually arrest vegetation of every description.

Before taking a final leave of the subject, permit me to express my acknowledgments of the uniform courtesy with which you have treated my communications.

Respectfully, R. T. BALDWIN.

Ploughing Under Grass Crops.

LEECHVILLE, Beaufort Co., N. C., April 12th, 1861.

To the Editor of the American Farmer:

DEAR SIR: In your April number you speak of fertilizing crops, and say the oft-advanced theory of Northern publications of turning under green crops, is at least questionable. Now this accords precisely with my views and experience, if these crops are turned under promiscuously, and without the study of the nature of the case; but by reflecting, we understand that green crops turned under commence decay immediately, and during that decay the nitrogen and other gasses which are the food of growing plants, are liberated, and unless there are growing plants to feed upon them during their disengagement, they escape into the air and are lost. We will take an old wheat field, for instance, and turn it under and sow peas; these peas will immediately grow off luxuriantly, feeding upon the gasses escaping from the decomposition of the stubble and weeds. Now, if these peas are allowed to grow until fall and then turn them under and sow wheat on them, the result will be that the crop of wheat will be much more luxuriant in its growth and produce nearly one-third more on poor land than the former crop; but should you turn these peas (that have been sowed on the stubble land) under in the fall, then they decay during winter, and the nitrogen, their most fertilizing constituent, escapes into the air and is lost to the farmer, and in the spring you have a nice fine tilth, that appears to have been much improved by the fall ploughing, and you will anticipate a fine crop, and the corn will grow off finely for a few weeks and then fail and make quite an ordinary crop. But should you not turn these vines under until spring, and then turn them under, you will make a much improved crop.

By following this plan on a worn-out farm, which I came in possession of about four years since, I have quadrupled the crops without manure. An experiment of the following kind led to the adoption of the system: I sow every year in peas almost all my wheat and oat stubble, and selecting an acre not sowed in peas, alongside of an acre sowed in peas, and sowing both in wheat, cut and thrashed separate. The acre which was not sowed in peas produced six bushels wheat, and that which was sowed in peas produced nine and a half bushels.

These being facts, and this land steadily improving with this treatment, what becomes of Professor Mapes' mineral theory? For if his mineral theory was correct, the phosphates are entirely exhausted from all worn-out land, and they could not by any means produce a grain crop without the addition of the phosphates.

The decomposition of vegetable matter in the soil certainly improves it, and whether it be the absorption of nitrogen, ammonia, nitric acid or some other principle from the air, or whether it be the progression of elements through different plants, from the decay of other plants, thus making a higher and higher order of plants, or whether it is owing to all these things combined, (which I believe is the case,) remains yet for practice and chemistry to demonstrate.

Respectfully, yours,

J. F. LATHAM.

We are glad to have the views of our correspondent, and hope we shall get additional facts from others as the result of their observation and experience.—ED. FARMER.

"Practice is nothing else than *applied theory*—therefore *study the theory* of your pursuit, whatever it may be, if you would not remain a bungler all your life."

Plant Stimulation.

To the Editor of the American Farmer:

Please inform me whether Dr. Pendleton maintains that vegetables, because they have not nerves, blood-vessels or muscular fibres, *cannot be stimulated.* Does he mean to say that the organic functions of vegetables *cannot be excited?* If he *does* mean to be so understood, please inform me how he accounts for the well-known influence that heat, light and electricity exert on vegetation. SAXON.

Fauquier, March 30th.

On receiving the above, we forwarded it to Dr. Pendleton, and are favored with the following. —EDITOR.

RESPONSE.

MR. EDITOR: I received your favor of the 4th inst., (not until yesterday) asking a response to the above queries, propounded by your anonymous correspondent, "Saxon." I regret that a press of other engagements constrains me to reply briefly. In an article of mine, published very recently in the *American Farmer*, my views as to the *stimulating* properties of Guano were stated with as much precision as was, perhaps, practicable in so concise an examination of that question. I *do maintain* "that vegetables, because they have not nerves, blood-vessels or muscular fibres," are not the subjects of *stimulation* in any proper sense of the word, because a *stimulant proper* is "an article which produces a quickly-diffused and transient increase of vital energy and strength of action *in the heart and arteries.*" Vegetables have neither *heart nor arteries*—ergo, they are not the subject of stimulation in any ordinary sense of the word.

But it is asked: "Does he mean to say that the organic functions of vegetables *cannot be excited?*" Most assuredly *not*—for to make any such assertion would be to deny the circulation of the sap, vegetable growth, and even life itself—to all which light and heat are indispensable. But I do mean to say and maintain, that guano is not a *stimulant*, and that if it and other concentrated fertilizers generally promote the growth of plants, it is not because they are thereby *stimulated*, but because they are *fed* with a proper and nutritious *food*. No doubt the application of the word *stimulant* to these concentrated manures is a misnomer, and should be discarded from agricultural *nomenclature* altogether, as producing naught but confusion, as not at all expressing the action of any known fertilizer.—Good stable manure is as much the *food of plants* as *milk* is that of *animals*, and Peruvian guano is, as compared with that manure, very much what *solidified milk* is to the raw material. It is a highly concentrated, and, as it were, cooked and prepared plant-food—*sui generis*—by no means a perfect manure, but certainly a very valuable one. P. B. PENDLETON.

Louisa County, Va., April 10, 1861.

Some of the Incidental Advantages of Wool Growing.

Another advantage of the sheep stock, is as farm scavengers—to clean out all noxious weeds, briers, &c. If you have a timber pasture grown up with briers and hazel, by pasturing in the summer with sheep, and especially by feeding them on it in the winter, you can in a year or two completely exterminate them. So also by turning a lot of lambs or young sheep in your corn field after your corn has been "laid by," they will completely use up the cockle burs—which are then green—and purslain and all other sorts of weeds. To be sure they trim off the lower blades of the stalks, but that does not hurt the corn, while my hands say they can cut up a number of shocks a day more, in a field served in this manner, on account of the ground being too smothered and it being so much easier to get about in.

I believe that sheep consume to more profit, everything grown on a farm; not only the corn and hay, but the fodder and straw, volunteer stubble pasture, and even weed patches if a man grows such a crop.

I believe also that every farmer in Illinois who owns 160 acres of land, and who is engaged in a mixed husbandry, as the most of farmers are, can keep one sheep to the acre, or at all events, 100 sheep, and the gross receipts of the sheep be almost a clear profit. I speak of those who raise about so many acres of wheat each year, ditto of corn, and of hay, and of oats, and who keep a few horses, a few cattle, and a few hogs.

Capt. Brown, of the Island Grove, our noted Short Horn breeder, said a few years since, that his flock of 500 sheep cost him nothing but the washing and shearing, that what they ate was a clear gain to him, and that he wintered them without feeding an ear of corn. He said his farm was fully stocked with cattle, but that when his pastures had been eaten sufficiently close by cattle, he turned on his sheep, and not only summered them on his blue grass but wintered them also.

But especially do I believe that our 'hog men' and those who raise grain to sell in this part of the State, could keep the above mentioned number of sheep at almost a clear profit. Their prac-

tice is to gather the corn from the stalk, then in the spring their stalks are broken down, raked up and burned. So also their straw is burned up as soon as threshed.

I have told men who followed this bad fashion of making a clear loss of all their fodder, that if their corn had been cut up when bright, in the fall, I could, by feeding to sheep, make as much money out of the fodder, as they could out of the corn. In such case the cost of raising, gathering and hauling off is charged to the corn, and the *fodder* to be charged with the *cutting up* and feeding out. And at present when they are hauling six and seven miles to the railroad, and getting fourteen and fifteen cents a bushel only, I think I could do it. Let's see how the account would stand. We will say they have an average of fifty bushels to the acre. When *raised, gathered, hauled off* and sold, they get $7.50 for an acre of corn. You can make the deduction yourself for cost of raising, gathering and hauling off. What does it leave as the worth of the corn, after taking out the labor of raising, gathering, and hauling, calling the farmer's time worth fifty cents a day and use of horse twenty-five cents a day?

Let us see what the fodder is worth to feed sheep. Every farmer knows, or ought, that an acre of good, bright fodder, is worth as much, or nearly, to feed any sort of stock, as a ton of the best hay. With my acre of fodder, I think I could winter three sheep. (I mean to put it low enough.) The acre of fodder costs me a dollar to cut up, and I call the feeding it out worth fifty cents more.

I stated in a former letter that my sheep averaged me $1.70 per head, taking a term of years. (Last year I sheared an average of $2.25.) I also said the winters was the chief expense of keeping a sheep. For my fodder I get three fleeces at $1.70 each—$5.10—and if ewes, two lambs at least (which is at the rate of only sixty-six to the hundred) worth $2 each, or $4 in lambs, and $5.10 in wool, making $9.10—from which take $1.50 for wintering and 50 cents more for summering and shearing my three sheep, and it leaves how much as the worth of an acre of fodder?

Somebody has said that the New Hamphire Yankees have *made money* out of their *disadvantages*. We suckers *lose money* on our *advantages*.

It may seem, if you remember the amount of corn I said in my last letter would be necessary to winter a sheep, that I am in a manner contradicting myself when speaking of wintering sheep on fodder alone.

In that case I was speaking of feeding in large flocks, while in the present, I have in view feeding but a small number in one lot, which makes quite a difference in the amount and sort of feed necessary.

In feeding 1000 sheep in *one* feed lot, it will take nearly *half as much again* feed as it would to feed the *same* number in *ten different* lots. I can winter 100 sheep entirely on fodder, and have them in as good *apparent* condition as 1000 head which have been fed in one lot on grain—but the grain fed sheep will shear the heavier fleeces. All summed up, the point I wish to make is this—that all farmers in Central Illinois who own a quarter section, and who fat hogs, or sell corn, might keep 100 sheep on what they waste. I believe that the stalks left to stand in the field to be burned in the spring, and the straw burnt, would, if saved, winter every last horse, head of horned stock, and sheep, in this part of the State.—*Cor. Prairie Farmer.*

A Plea for the Birds.

Hon. Samuel A. Law, of Meredith, in this State, and for the last three years Member of Assembly from Delaware county, has written a communication upon the Act of last winter, one section of which forbids the killing at any time of the nightingale, night-hawk, blue bird, yellow bird, Baltimore oriole, finch, thrush, lark, sparrow, martin, swallow, robin or bobolink, between the first day of February and the first day of September, under a penalty of fifty cents for each bird killed. The reason for the passage of this law he states to be the agency of these birds in preventing the increase of noxious insects. It has been urged that the robin was so destructive to cherries and strawberries, as to justify its destruction. This opinion, Prof. J. W. P. Jenks, of Middleboro', Massachusetts, has successfully refuted. The plan adopted by him was, to obtain birds at daybreak, mid-day and sunset; to obtain them from village and country, and to preserve the contents of their gizzards. He demonstrated conclusively that insects injurious to vegetation constitute the natural and preferred food of the robin, and that during two-thirds of the year the bird takes no vegetable food whatever. Whenever vegetable food was found in the body, it was only in limited quantities, and mixed with insect food. This was only in the months of June, July, August and September, and then the vegetable products consisted mainly of elderberries and pokeberries. The edible fruits destroyed were in too minute quantities to warrant complaint.—*Rural N. Yor.*

[For the American Farmer.]

Honey Bees.

BIRDS WHICH LIVE UPON INSECTS, THEIR PROTECTORS.

Honey bees seem to have been known to man from a very early period. Samson, who slew the Philistines, while returning from the vineyards of Timnath found honey and swarms of bees in the carcass of a lion. We propose to enter into a few not uninteresting particulars concerning these extraordinary insects, whose history has employed the pens of the greatest naturalists.

Their food consists of saccharine vegetable secretion, abundant in flowers. A hive of bees in a state of tranquility consists of eggs and larva, or pupa, in different stages of advancement, and besides these, of a dominant female, called the queen of neuters, or workers, (really undeveloped females,) and lastly, of weaponless males, or drones. The life of the queen is from three to four years, the workers six months, that of the drones four months. The number of drones in a hive is very great, say several hundred, sometimes thousands; a single one is only required for the queen.

The power of the Divine preserves all animals, as at first. His creating power produced them, and he devoted them to us for our welfare. He gave us memory and the faculty of reasoning in a certain degree, and knowledge to learn the history of all living creatures, whether for our interest or not. From the number of animals in the different elements and regions of existence, which prey upon insects, there can be no doubt but the principal object the Creator had in view in the formation of these was the subsistence of many of the larger orders of his creatures. Bee-keepers say that the drones are destroyed by the working bees. This is against the order of nature, for this species of insects live in harmony with each other, as I have found to be the case. Instincts first implanted by the Creator have passed through millions of generations unimpaired to the present day. Is not this instinct implanted in the birds which destroy bees? I think it is. Well, then, if the King Birds are guilty of destroying bees, has not this been implanted in them? I think it has, but not to destroy the working bees. You will see him in fields of pasture take his stand on the tops of the mullein or some other rank weed, near the cattle, and make occasional sweeps after passing insects, particularly the large black fly, so terrifying to horses and cattle—his eye moves restlessly around him, traces the flight of an insect for a moment or two, then that of a second, and even a third, until he perceives one to his liking. This is the drone bee—when with a shrill sweep he pursues and seizes it, and returns to the same spot again to look out for more. Why did he not seize the working bee? Why he full well knew they were armed with a sting to defend themselves.

No insect bird has ever come under my notice which destroys an insect which is useful to mankind. What does that celebrated bee-keeper of Ohio (L. L. Langstroth, Esq.) say: "No apiarian ought ever to encourage the destruction of birds because of their fondness for his bees. We shall soon not only be deprived of their aerial melody among the leafy branches, but shall lament more and more the increase of insects." Let us see what Mr. Quinby, of New York, a practical bee-keeper, of an extensive experience in the culture of bees, says of the King Bird: "He stands at the head of the list of depredators. With a fair trial he will be found guilty, though not so heinously criminal as many suppose. I find him guilty of taking only the drones. If he was satisfied with workers as well as drones, why does he not visit the apiary long before noon and fill his crop with them? But instead he waits till afternoon for the drones.—Why he well knew they were armed. The instinct of armed insects is, the moment they are touched they send out their stings, which pierce like that of a needle and gives much pain." Could a bird take up in his bill and swallow so dangerous an animal? I think not. You will often find the Cat Bird down by the hive, picking up only young and immature bees, such as are removed from the combs and thrown out. Let us see what Wilson, the ornithologist, says of the King Bird: "Several intelligent farmers of my acquaintance are of opinion that he picks out only the drones and never injures the working bees."

The farmers of Europe having learned by repeated observation that without the aid of birds their work would be sacrificed to the more destructive insects, had laws passed imposing heavy penalties upon those who should destroy insect-destroying birds.

In Japan, where the population is so dense, insect-destroying birds are protected by law.—They know their value and how to appreciate them.

These poor birds—the Bee Martins or King Birds—have been destroyed without mercy; they are the agents which have been provided by nature to check the undue increase of noxious insects. The number of insects which they destroy

is astonishing, and their lives to the farmers and planters are of great consideration. Now, as it is proven by the most experienced breeders of bees in this country, that they do no injury to the bees, they should be protected.

J. JACOB BOWER.

Stray Leaves from the Book of Nature.

Some plants go regularly to rest, and sleep so profoundly that in a clover-field not a leaf opens until after sunrise, and others in South America are universally known as the "sleepers." Most mimosas fold up their delicate, feathery leaves as night approaches, and when the sun rises once more, the little sleepy ones unfold again, slowly, and, as it were, reluctant, like some of us, to begin their work anew. It has even been observed, that these so-called sensitive plants, when wounded or otherwise suffering, cannot sleep, but keep their leaves open and erect all night long, until they perish. Other plants close their leaves during the day, and awake from their slumbers at night, while a few even droop and clasp the stem, as if seeking support in its strength, whenever the sky is overcast and a storm is threatening.

This peculiar faculty of sleep stands in immediate connection with the general power of certain leaves to move, either upon coming in contact with other bodies, or, apparently, in spontaneous motion. All the above-mentioned mimosas fold up their leaves when merely touched: first one little leaflet will be closed, then another, until the whole leaf proper, with its delicate footstalk, droops down and clasps the stem of the parent. If the plant be very irritable—and nervousness is *here* found to be in proportion to *good* health—the other leaves will follow the example, until the whole little plant plays, to use a Virginia phrase, "possum," and looks, for all the world, as if it were asleep. The oxalis of this continent requires several successive strokes to produce the same effect, and the robinia, or locust, which sleeps at night, must be violently shaken. The common wild lettuce, also, shows a great irritability, and curiously enough, only when the plant is in flower. Upon being touched, the leaves contract beneath, and force out, above, a milky juice, with which they soon become covered.

The so-called spontaneous movements of leaves and other parts of plants arise mostly, though not always, from their general tendency to turn towards the light. Little is as yet known with accuracy of this interesting feature in the life of plants. A great number of leaves, however, alter their position by night and by day. Some make a half, some a quarter revolution, and then turn their points downward. Others, again, fold up, in regular order, the youngest leaf first, as if it required most rest, whilst the oldest are apt to do entirely without it. In other plants it is the state of the atmosphere which determines such movements—the beards of the geranium and the wild oat curl up in dry weather, and straighten again in damp days—other plants do the contrary. The hygrometrica of S. America closes the leaflets of its finely pinnated foliage long before the clouds rise, and thus foretells the impending change of the weather, and the plant, known among us as the fly-trap, is called in its home on the warm plains on the banks of the Senegal, the good-morning flower, because at that season of the day it gracefully bends over and bows to the passer-by. On the banks of the Ganges, however, exists a vegetable form, so quick of life as to resemble some of the minor animals in its motion. The leaflets of this singular plant are in perpetual motion; one leaflet will rise by a succession of little starts, and then fall in like manner; while one rises, another droops, and thus the motion continues and extends over the whole foliage. Nor does it cease at night; in fact, it is said to be more vigorous even in the shade, and in the still, hot hours of an Indian summer night the plant is full of life and incessant motion. Not less singular is the action—for it is more than motion—of plants, like Venus' fly-trap, and others. The flowers are covered with sweet honey, and thus allure many an unfortunate insect, which has no sooner touched the sweet store, than the plant moves either the long stiff hairs, which grow along the middle nerve, or closes its crown of gorgeously colored leaves above, and thus seizes upon the unlucky robber. We can speak no longer of sweet, innocent flowers—for so fond are these blood-thirsty plants of their favorite delicacies, that they will not thrive in green-houses from which insects are excluded, and gardeners have been compelled to supply them, strange as it may sound, literally with animal food, to see them thrive and blossom as in their native home.—*M. Schele de Vfre.*

A good man is almost always a cheerful one. It is fit that bad men should scowl, and look blue, and be melancholy; but he who has God's smile of approbation upon him should show its radiance in his countenance.—*Ex.*

How to Raise Hogs.

A. G. Mullins, of Kentucky, in a communication to the *Genesee Farmer*, offers the following hints on the raising of hogs:

"We intend not to say how a few hogs can be raised to an advantage, but how a man may raise them as a business, with the least labor and expense, and leave the land in the best condition. All farming, in my opinion, ought to be conducted with a reference to the continued improvement of the soil. Present gain, by a deterioration of the soil, will ultimately prove to be a loss.

To succeed in raising hogs, as in other stock, we should have a good stock. The Berkshire crossed with our common hogs constitutes a very good stock. The Berkshire communicates its fattening properties and early maturity—two very desirable qualities—and the common stock gives size. A cross of the Berkshire on the Irish grazier makes a very good stock.

Say we have a good stock to begin with—a stock that matures early and fattens well. The pigs should come from the middle of March to May. There is a great advantage in pigs coming at this time, as we can graze them through two summers and have them to keep only through one winter. They come to be of fine size by the second fall or winter. Hogs may be pushed into market younger, but at more expense in grain, and they will be smaller at fattening time, which is a great disadvantage.

The greatest profit in hogs is in grazing them, and turning them upon grain fields, where they can gather for themselves, and having them large and in good condition at fattening time. The sows and pigs should be kept in good growing condition, by feeding them on Indian corn, or corn meal made into slop. As soon as the clover begins to blossom, or a little before, turn them upon it. Sows and pigs should still be given some grain, while in the clover. Having a field of oats early sown—the size of the field to be in proportion to the number of hogs—and as soon as the oats are ripe, turn the hogs upon them to gather for themselves. To pasture hogs to the best advantage through the summer, it will be necessary to sow a field of rye, as above, and after they have eaten the oats, turn them upon the rye. Though the rye will be ripe before the oats, it is thought better to let the beards rot, and it will keep good in the field until September; whereas the oats will rot in a short time. After the hogs have eaten the rye they may go upon the clover again. They then should have old corn to keep them from being reduced in flesh; the second crop of clover not being as good as the first. This method may appear very wasteful to those not familiar with it, but if a little grain is left on the field, it will be an excellent fertilizer, and the straw and everything that grew on the field is left there, except the fat that is driven off with the hogs. This leaves the field in good condition for the next year.

The hogs should be kept in good condition through the winter and spring. The best place to winter them is in the woods, and let them have low, long, dry shelters to sleep in. Let them be turned on the clover the second year about the time it blossoms, and I prefer to give them a little grain. Then let them go on the oats and rye as they did the first year. When they come off the rye the second year, it is very important to grain feed them while on clover, until they are put up to fatten. It is a great advantage to have hogs large and in good condition when fattening time commences. A lot or small field of corn, early planted, to turn on about the 15th or 20th of September, is an excellent plan; or fence off, with a temporary fence, a portion of a larger field. Continue the hogs in the field until about the middle of October or the first of November; then take them to a field intended to be ploughed for next season (a clover field is best) and feed them plentifully until about the first of December, at which time they will be fit for market or slaughtering.

By feeding down upon the field, you save the labor of gathering, and leave all that grew upon it, except what is driven off in fat upon the hogs. By sowing the field in rye a few days before the hogs are taken off, a fine crop can be obtained. The grain left upon the fields pastured during the summer will soon spring up and afford a fine fall and early winter pasture. If it be intended to sow the oat and rye fields in clover, the pasturing down of the grain makes no difference. Take off the hogs as soon as they eat the grain. The decaying straw and manure left upon the field will be an advantage to the clover.

The hogs should be well salted, and have access to water. From the middle of October to the first of November it is important to have a good, dry shelter for them to sleep in; earlier than that they will generally sleep in the open air. If it is desired to fatten hogs the first season after we commence raising, of course we must buy them of suitable size in the spring.—The number kept to breed from must be suitable to the number we want to raise. A good brood sow will raise two litters a year, and from six to ten at a litter. A little experience in this matter will direct us aright.

By a strict attention to the above method of raising and fattening hogs, as much or more can be obtained for the grain than it can be sold for, and all of it fed upon the farm, which is no small consideration. By raising grain and selling it off the farm, it will be becoming poorer. By raising and judiciously fattening hogs, the farm will be growing richer. This, in ten years, will make a great difference. I have known some farms, reduced almost to sterility by bad management, by a proper management in sowing rye and oats and clover, and feeding them on the ground, made very productive. Feeding Indian corn upon the land is very improving to it. I once knew a field planted in corn for four years in succession, and the last crop was as good as any that preceded it.

In regard to the worth of grain fed to hogs, I made one long-continued experiment, which satisfied me that it is remunerative. Some years ago, I had a lot of corn which I could sell for only twenty cents per bushel. I concluded I would feed it to some pigs, which came about New Year's. I gave them two ears a day each until April—about ninety days. I weighed an average one on the 1st of April, and it weighed 52 pounds. It was then worth 2½ cts. per pound, or $1.30. It had eaten one and a bushels of corn. I then increased the feed to three ears per day until the 15th of July—about one hundred and six days. Each ate, from April until the 15th of July, three hundred and eighteen ears; weight 130 pounds, and worth $3.25. They had eaten each, from January to the 15th of July, four hundred and ninety-eight ears—not five bushels of corn, which was only worth $1; whereas the shoat was worth $3.25. While corn was worth only $1 for five bushels in the market, less than five bushels was worth $3.25 fed to hogs. This was effected without clover in the summer. By calculating the above weights at four to five cents per pound, you will have the worth of the pigs at present prices. This convinced me that corn can be profitably fed to hogs.

I think now I have redeemed my promise; shown how hogs can be raised as a business, at the least amount of labor and expense, and leave the land in the best condition."

There is nothing on earth so beautiful as the household on which Christian love forever smiles and where religion walks a counsellor and a friend. No cloud can darken it, for its twin stars are centered in the soul. No storms can make it tremble, for it has a heavenly support and a heavenly anchor.—*Ex.*

Manures.

First, our chief reliance is the stable. Our stalls are kept *well* littered with dry leaves sometimes as often as once a week, at others only once a fortnight.

When the stalls get about twelve inches deep in manure, they are emptied by first throwing the manure out with dung forks into the stable passage, then carrying it in wheelbarrows to an adjacent shed, to remain until wanted on the land.

Secondly, we pen our cattle three hundred and sixty-five nights in the year, on the same spot of land, and that spot is exactly seventy-five feet square, with a shed on its northern side seventy-five feet long and fifteen broad, divided into fifteen open stalls and closed in on the northern side. We like to shut off everything coming from a northern direction. This shed and this lot is regularly littered also, and the manure is never disturbed but three times during the year, viz: spring for cotton, summer for turnips and barley patches, and fall for wheat. If we have it dry enough in December we haul it out and scatter it upon land intended for cotton the next spring.

Thirdly, our sheep lot adjoins both horse and cow lots, and is regularly littered, and our sheep are penned in it every night in the year, Sundays not excepted. This lot also has a house on its northern side, and in this house our sheep are salted three times a week the year round, and fed every night during the winter, if their food should only be a little cut oats or wheat straw, with salt water sprinkled upon it.

Fourthly, in our horse lot, which is also littered, we call every night our hogs and feed them, if it be only a half nubbin each. Here they sleep and are turned out every morning.—In the winter the hogs we fatten to kill are penned upon leaves, and then we calculate upon a load of manure to every hog, and our loads always are four horse wagon body level full, if it be one hundred bushels.

Fifthly, our chicken coop is also littered with a little pine straw, occasionally sprinkled with lime, charcoal dust or ashes. This manure, which we consider equal to guano, pound for pound, seldom finds its way to the plantation, as our *better half* says it is the best manure in the world for Irish potatoes, onions, okra or tomatoes, and being a fond lover of all the vegetables, we always give up to her judgment, just at this point.

Sixthly, we have a pen behind our stable, built of pine poles, into which is occasionally thrown a load of leaves, and upon these leaves are thrown

all the leached ashes of the plantation, all the dead chickens, pigs, rotten eggs, sweepings of the house yard, soap suds, now and then a peck of salt, the slops from the chambers daily, and all kinds of bloody water or slops that hogs will not eat.

Seventhly, if a calf, cow, mule or horse dies, we always scoop out a spot on some barren knoll, about ten feet square; upon this we throw a load of leaves; quarter the dead animal, put it upon the leaves, cover it with about a bushel of lime, another load of leaves, or two or three loads thereupon, and then throw the dirt previously dug out, back upon the pile; and set, with gun in hand, to watch the pile every night for a week. This latter procedure is not so necessary, unless the heap contain a mule or a horse; and if it should, every dog in five miles of the heap will find it out and attack it at night, unless protected. We have several times made large accessions to our heaps by adding occasionally thereto a worthless cur or a still more worthless hound. When we first began this process of making manure, we were seldom without a heap, because we got every horse that died within three miles of us, but our example has opened the eyes of our neighbors.

Eighthly, we never touch our manure until it is dry, and only haul it out when the land is dry. In this way our loads seldom contain less than eighty bushels.

Ninthly, we never put manure down in heaps or little conical piles, to be scattered hereafter. We scatter it from the wagon broadcast, and aim to make ten or twelve wagon loads cover an acre. Of horse lot manure, only trampled leaves, we have put twenty wagon loads on an acre; of good dry, well pulverized stable manure, we aim to put about eight hundred bushels. Land manured in this way will yield four good crops, the fourth better than the first, and should rest the fifth year.

Tenthly, any planter living in the country, with not more than twelve hands, and keeping a pair of carriage horses, can, with this pair, and driver, and an old man or suckling woman, keep all these places littered, haul out most, if not all of his manure, keep his horses fat, allow his family to use them as often as reasonably wanted, and discover that no two mules or hands on his plantation pay him annually a better percentage.

Eleventhly, we have given our practice to our readers, and if any of them are incredulous, we can say, come to see us. Come now before we get all our manure hauled out, or come the first of July or the first of November to see our stock on hand. We do not profess to tell you anything about the *carbonates, or phosphates, or sulphates*, or any other of the "ates" and "ites" of chemistry, because we are not agricultural chemist enough; but we do tell you, we have never regretted our plan of making or treating manures and seldom have we seen more made per hand, or any applied, yield a better percentage.

Lastly, many of our readers will object to our method of penning upon the same land our cattle and sheep. Our reason is this: Hurdling sheep is no protection against dogs, and housing them at the "quarter" is, moreover, moving hurdles and "cupens" (cowpens) during the spring and summer months, labor the cotton planter has no time for. And most of all, we despise to see a poor cow standing on a cold December morning, with her nether end to the wind, drawn up into a knot as if beseeching you to come and move her to more comfortable quarters. We do not approve of the plan of stalling cattle, but we believe that they should be penned with the privilege of going under shelter. And we further think it bad economy for any planter to keep more cattle than he can treat well during the winter; but, alas! how many have more than they can feed, and in consequence how much suffering does humanity inflict in this way upon the serviceable brutes of the land.

We value our domestic manures on the plantation for cotton, corn, or any other crops, in the following order—pig pen, stable, sheep, cow, compost, lot.—*Farmer and Planter.*

Experiments in Top-Dressing.

Messrs. Editors: There is no object in agriculture deserving of more inquiry, and of greater importance to the farming interests, than the knowledge of the best kind of fertilizers to be used for top-dressing grass lands. As yet but little is actually known by which to arrive at any practical results, for obtaining the largest crop of grass. I have read carefully the remarks and discussions had at the several meetings in the State House on the subject, and as yet am far from the information desired—theories and crude speculations will not enlighten me in the case, and it is only actual experiments and comparison of the several kinds of fertilizers in general use, that can afford the valuable information so much wanted by every farmer. When these experiments are made and clearly explained, they will open to us a knowledge of vast importance.—For what crop is there of greater value than the hay crop? With the present implements now used in husbandry, none can be more easily pro-

duced, for the names are within the reach of every one, either by owning or hiring the best mowers, tedders, and other machines necessary for the purpose.

The desire of knowing something more definite and practical on this interesting subject, induced me the last season to investigate, in a small way, a series of experiments, in the hope that I might derive some benefit myself and be useful to others. Accordingly, in April last I selected a field best adapted to the purpose, very uniform in the sward, free from shade and other objections—and staked out five several lots, each measuring 250 feet long by 45 feet wide, and top-dressed them with the various fertilizers, as follows:

No. 1.—2 cords of manure well rotted and mixed with 1½ horse carts of soil.

No. 2.—120 bushels leached wood ashes.

No. 3.—2 cords green cow manure, the droppings of only a few day before.

No. 4.—80 bushels unleached or dry wood ashes.

No. 5.—252 lbs. Peruvian guano, mixed with 1½ horse carts of brook-mud.

The cost or value of the top-dressing, for each lot, was as near ten dollars as possible. The grass was very carefully cut and made, the first crop in July, the second in September, accurately weighed, yielding as follows:

Lot.	*First Crop.*	*Second Crop.*	*Aggregate.*
	lbs.	lbs.	lbs.
No. 1.....	790	380	1170—Compost.
No. 2.....	680	440	1120—Leached ashes.
No. 3.....	960	640	1600—Green cow manure.
No. 4.....	900	550	1450—Dry ashes.
No. 5.....	1300	270	1670—Peruvian guano.
	4620	2380	7010.

You are aware the early spring was very dry, and quite a drought prevailed during the months of April and May. This, no doubt, retarded vegetation, and checked, particularly, the fertilizing qualities of the ashes, as they laid in the sward for a length of time, as dry as when first spread. The copious rains, afterwards, produced a wonderful change in thickening up the grass. The guano dressing, you will observe, produced much the largest quantity on the first crop, although very little more than the green cow manure with the aggregate of both crops.

The second mowing of the guano lot disappointed me, and its short comings on the second crop, almost conclusively proved that it had lost much of its fertilizing properties in the production of the first crop of grass. It would not surprise me on the return of the next season, to find the green cow manure lot superior and more reliable than either of the other fertilizers, as a general dressing. Should the return of the next year's mowing result as I anticipate, I may possibly trespass upon your valuable paper at a future day.—R. S. Rogers, *in N. Eng. Farmer.*

Manuring Corn and Wheat.

To apply manure to corn, the common course is to draw out the manure on the field to be planted, and throw it off in heaps, say four to the load, and left lying till ploughing time, when it is spread and ploughed under. This is a great deal better than none at all, and is perhaps the only way that can be adopted when help is very scarce, but still it is a wasteful method. As far as manure is concerned, the same amount reduced to compost and applied in the hill would secure a far greater yield of grain.

But as applied to the wheat crop, I consider its application as a top-dressing by far the cheapest, best and most profitable.

My reasons for this opinion are these:

1st. It is more evenly spread than it usually is when drawn and thrown on the ground and spread before ploughing, and thus it can be made to reach and sustain all the wheat plants.

2d. By being put on the top it is just where it is needed to nourish the young plant and give it strong and healthy roots, so that it is not easily thrown out by the frost—it also prevents winter-killing by freezing.

3d. Having tried it myself and having seen others try it, I *know* that it is altogether the best way, that is if the appearance of the growing crop and the looks of the shocks after the wheat is cut are any criterion by which we are to judge.

But the objection will be that it takes too much labor to prepare manure for such a use, and that it takes a team and hand from the plough right in the busy time of seeding, consequently it won't pay. Let us see about that. In the first place the manure should be taken from the yard (or if the yard is large enough it can be done in it) and piled in a heap so that it will rot and become pulverized. I suppose it would be better if it should be pitched or shoveled over before using, but still that is not necessary if care is used while making the pile to mix the coarse and fine together. If there is much coarse manure, the pile should be made rather flat on the top to allow the rain to go down through and to rot it. I said it was cheaper, and the reason is that this can all be done when the ground is too wet to plough or to allow the manure to be hauled over it to the field.

In the fall, after ploughing for seed and before sowing, haul the manure and scatter it from the wagon, and it can be put on thick or thin as desired. I believe one load thus applied is worth two put on before the fallow is broken.

Experience and observation have satisfied me that where land needs manure at all for wheat, two acres thus handled will produce more than three without it, so while it takes a little more time during seeding, it is not a loss but a gain.

Having giving my opinion, I am prepared to back it with this offer: If any man who does not take the *Farmer*, whose barn-yard resembles the one hinted at in the beginning of this article, will make the experiment fairly and finds it does not pay, he may draw on me for one year's subscription.—*Cor. Michigan Farmer.*

How Lightning Rods should be Made.

The editor of the New York *Tribune* having, in reply to a correspondent, raised its potent voice against lightning rods, the *Scientific American* sets him right on the question as follows:

"So far as the science of the question is concerned, our contemporary (*The Tribune*) is evidently out of his sphere; he does not know the nature of a lightning rod. Its function is simply that of a conductor, not of an attractor. It is carried up to such an elevation above the building that it may take the electric cloud and conduct it silently to the earth, in order to prevent it striking the non-conducting part of the building. To do this perfectly, it must be continuous from point to base, and form a perfect connection with the moist earth below. If the connection is not perfect, of course the rod cannot perform the functions of a conductor, and so a disruptive discharge may take place. There is abundant evidence for concluding that all houses which have been struck with lightning when furnished with rods have had their conductors imperfectly connected either in the sections of the rod or in the earth. The rod should extent down several feet in the ground, and have a large plate or bar of metal at the base, according to the arrangement of the electric circuits at all telegraph stations. If a house is built on a dry and sandy situation, it is all the more necessary to be careful in extending the conductor deep into the earth, where it will meet with moist soil. If all lightning rods of the common size were thus carefully put up, we would seldom hear of such cases as the one referred to." (The case referred to was one in which a house furnished with a rod was struck by lightning.)

The Quality of Milk.

When the Duke of Athole offered a premium in April last for the cow giving the greatest quantity of milk, at ten successive meetings, Professor Anderson expressed his willingness to analyze the milk of the competing cows, without expense to the noble Duke or the Ayrshire Agricultural Association. This handsome offer was gladly accepted, and fair examples of the milk of the eight cows were drawn and forwarded to the laboratory. The results of the chemical examination were communicated to the Judges of the competition in the following letter:

	No. 1.	No. 2.	No. 3.	No. 5.
Water	88.23	88.52	88.28	86.93
Butter	3.67	3.01	2.71	4.17
Casein	2.88	2.87	3.04	2.91
Sugar	4.44	4.87	5.17	5.21
Ash	0.78	0.73	0.80	0.72
	100.00	100.00	100.00	100.00
	No. 6.	No. 8.	No. 9.	No. 12.
Water	87.32	87.60	87.56	88.12
Butter	3.65	3.48	2.92	2.60
Casein	3.14	3.07	2.88	2.93
Sugar	5.07	5.04	5.89	5.49
Ash	0.82	0.81	0.75	0.77
	100.00	100.00	100.00	100.00

The numbers attached to the samples are those on the bottles in which they were sent.

It is to be noticed that the difference in composition of the different milks is, with the exception of No. 5, by no means considerable. We see particularly that the casein is almost identically the same in all the eight specimens. The chief difference is in the proportion of butter, and it is here No. 5 surpasses the others, as it contains nearly 1.5 per cent. more of that substance than some of the others. As the butter is the most valuable constituent of milk, there can be no hesitation in setting down No. 5 as decidedly superior to any of the other specimens. It will be interesting to know how the results of analysis tally with the decision the Judges have arrived at on other grounds, and to facilitate comparison I may say that after No. 5 come Nos. 1, 6 and 8, which are nearly equal. Then Nos. 2, 12, 9 and 3, which are also pretty equal, but stand on a lower level.

I am, dear sir, yours truly,

(Signed) THOMAS ANDERSON.

A. B. TELFER, Esq., Ayr.

These analyses demonstrate the worthlessness of the small glass tubes, commonly called lactometers. This instrument not only does not approximate to the truth, it goes farther in the way of misleading, by sometimes pointing to conclusions which are the reverse of truth. The milk which Dr. Anderson's analyses proved to

be the best was from the cow belonging to Mr. Reid, Clune. On the trial at Holmston, the milk of this cow showed the smallest per centage of cream in the lactometer. On the other hand the cow, No. 12, seemed to have the largest per centage of cream, yet the analytical tests prove that it is the poorest of the whole. Mr. Reid's cow gave 9 per cent. of cream, according to the marking of the lactometer; No. 12 gave no less than 15 per cent. A stock of cows like No. 12 would be more useful to a town dairyman than to a farmer. They would give a large quantity of indifferent cream, and a residuum of very poor skim milk.—*Agricultural Advertiser, Scotland.*

Raising Calves.

As it is now about the time when farmers are commencing to raise their calves, I thought that I would give my mode of management with calves. The calf should never be allowed to suck the cow at all, but let her lick it until it is dry enough to handle; then milk the cow and commence feeding the calf by letting him suck your fingers until you can get his head into the pail, and get him drawing the milk nicely.—Then draw your fingers gradually from his mouth, letting them cover the end of his nose. If he continue to drink, then gently remove your hand, but if he throws up his head, repeat the same process again until he will drink without it. This is the best time to learn calves to drink, for I have had them sometimes at the second feeding, put their head down and drink without touching them. Beside, the calf, after he is one month old, may run in the same pasture with the cow, and he will not know how to suck.

Where several calves are kept together, it is very desirable to prevent them from sucking one another's ears, just after they have been fed. My way to prevent this is to fix some little stanchions—have one stationary, and one fixed to drop back while the calf puts its head through—then crowd it up and fasten it with a pin, in the same way as is sometimes used in stables to fasten cattle. When the calves are all fastened in this way, feed them at your leisure, and let them stand until their noses get dry, and there will be no sucking of ears when they are let loose.—J. B., *in Country Gent.*

The best way to raise a calf, if we look to the interest of the calf alone, is to let it run three months with the cow in a good pasture and then wean altogether. The next best, to let it take from the cow so much as you can spare, and give other food as soon as it will learn to eat of itself. —Ed. Farmer.

Shearing Sheep.

Few know how to shear sheep properly. The following hints will be useful:

First—In shearing time, do not pen your sheep more than half a day at a time. To do so makes them weak, irritable and difficult to shear.

Second—I think the best plan to shear is on a platform sixteen or eighteen inches high. The sheep should sit on the table, and rest its back and head on the left leg, the left leg is on the table, the right one on the floor. Commence cutting the wool at the brisket, shearing along the belly, letting the wool roll to the left, where it will be out of the way. When this is done, shear the flank, then commencing at the point of the shoulder and run the shears to the right ear; shear the neck to the left ear, and the left side as far as the back bone. Now change sides with the sheep, standing the right foot on the table, and finish the neck. Now shear the right side, finishing on the right hind leg. In this way, the fleece is kept whole; the sheep is turned but little, thus avoiding struggling, tearing of fleece and injury to the animal.

Within the last eight years, I have sheared five thousand sheep, without having a fleece kicked to pieces, and seldom cut a sheep; there is no excuse for cutting a fat sheep. When badly cut, they will always kick, and then the shearer will pound them with his shears or fist. The kinder you treat sheep, the better they behave. Many wool growers want their sheep sheared very close to the hide, but this is not well for the sheep nor for the next growth of wool. When sheared close, the hot sun injures them materially.—*Ohio Farmer.*

A Hint to Gardeners.

As our houses and gardens are always, more or less, infested with vermin, it is satisfactory to know that *benzine*, an article become sufficiently well known as a detergent, is no less efficacious an agent in insecticide. One or two drops are sufficient to aspyxiate the most redoubtable insect pest, be it beetle, cockchafer, spider, slug, caterpillar, or other creeping thing. Even rats and mice will speedily decamp from any place sprinkled with a few drops of the potent benzine. A singular fact connected with this application of benzine is, that the bodies of insects killed by it become so rigid, that their wings, legs, &c., will break rather than bend, if touched. Next day, however, when the benzine has evaporated, suppleness is restored.—*London Chronicle.*

Let another's passion be a lecture to thy reason.

Feeding Hogs.

A good warm bed with plenty of straw, is a prevention of all the diseases to which a pig is liable.

I have always found it economical to provide my pigs with a patch of clover to roam during the summer; if there is a running stream in it, so much the better; but because you provide pasture do not stint them on their feed. I think it is a great mistake to starve a pig through the summer, and then cram the corn into him for two or two and a half months in the fall. I believe it pays to fatten a pig gradually.

I have always been in the way of feeding my corn ground; I have two hogsheads which are filled alternately with meal, slop from the kitchen and water. One of the tubs is filled and allowed to sour, while the other is being fed. This sour is a more particular point than some may imagine. When viewed in a chemical light it has stages—1st, the *saccharine*, by which the gum of the vegetables is converted into sugar; 2d, the *vinous*, which changes the sugar into alcohol; 3d, the *mucillaginous*, which sometimes takes the place of the vinous, and changes it into a slimy, gistilaginous product; 4th, the *acetic*, which changes the alcohol into vinegar; 5th, the *putrefactive*, which destroys all the nutritive principles and changes it into a poison.

The precise point of fermentation, at which the food becomes most profitable, I have never been able to ascertain practically; but speaking theoretically, I should say that it was between the *vinous* and the *putrefactive*.—*German. Tel.*

Blue-Grass Region of Kentucky.

The editor of the Boston *Cultivator*, writing at Georgetown, Ky., says that section presents in many respects a striking contrast to any portion of New England.

In an agricultural view, we see little preparation for winter, at least little that we are accustomed to see at the north. The large barns in which our farmers shelter their animals and the provision for them, are not found here. There is nothing like what we should call a barn, and but seldom any artificial shelter for stock, except stables—mostly quite rude, being often made of logs—for working horses. Neither are there stacks of hay on farms in general. The stock is supported in winter almost entirely by grass.—"Winter pastures" are reserved, on which the blue-grass (*poa pratensis*) with its long, soft leaves, covers the ground like a mat, and there is seldom any weather that the stock cannot graze. Indian corn is produced in large quantities, and the stalks and husks of this grain, shocked in the field, afford fodder for the stock when the grass may be covered with snow, which however is not often the case for many successive days. Corn in the ear, or unhusked on the stalk, is fed to fatting stock or for other purposes, according to the wants of animals.

The country is remarkably healthy, not only for the human race, but for all domestic animals. The freedom of cattle and hogs reared here from disease, has often been commented on by butchers who slaughter animals from different sections.

How to Manage Horses.

Rarey gave a lecture in Boston, Monday evening, to horsemen. We make the following extract from the report of his lecture:

"He did not think that any horse was naturally vicious, but became so by ill usage and harsh treatment. A man should use nothing in training a horse that he would not use upon himself. The great trouble is that we expect the horse to do something that he does not understand; whereas the first movement should be to have him understand what is meant, and then he will readily obey. It is not necessary to shout an order or to make a noise; the horse can hear as well as man can. Care should be used in what we say to a horse, as well as how it is said.—Some men use the same words, no matter what order they wish to give. But there should be a distinct word for each command. When a horse balks, it is not because he is unwilling to do what is required of him, but because he does not know what is wanted to be done. After he has tried once or twice to pull his load, he is convinced that he cannot do it, and no punishment will induce him to try again. He should be allowed to stand quiet a few minutes, and then turned gently to the right or left, to show him that he can move, and he will soon put forth all his strength, if treated kindly. When a horse is frightened, he should be led near the object, that he may become acquainted with it, and see that it is harmless; but if he were punished, he would associate the punishment with the object of his fright, and be more frightened the next time he saw it."

Cure for Insect Bites.—Take equal parts of common salt and gunpowder, and moisten them with strong vinegar, and apply the same to the sting of a bee or wasp, or even the bite of a snake (saying nothing of gnats, &c.) and you need go no farther for a remedy.—*Ex.*

IMPORTANT IF TRUE.—In the *Irish Gardener's Magazine* it is stated not only that a decoction of the leaves of the camomile will destroy insects, but that nothing contributes so much to the health of a garden as a number of the plants dispersed through it. No green-house or hot-house should be without it in a green or dried state; either the stalks or flowers will answer. It is a singular fact that if a plant is drooping, and apparently dying, in nine cases out of ten it will recover if you place a plant of camomile near it.

The *Wire Worm* is very destructive of the young corn plants, and various means to destroy them have been suggested. We have lately seen recommended by a Canada farmer, lime and salt, by sowing equal quantities over the ground at the rate of one bushel to the acre. This quantity strikes us as entirely too small. We recommended a dozen years ago to mix one part salt and three parts plaster, and apply it, say a tablespoonful to a hill, *qround* (not *to*) the young plants, at the usual time of plastering, *as a certain remedy.— Germantown Tel.*

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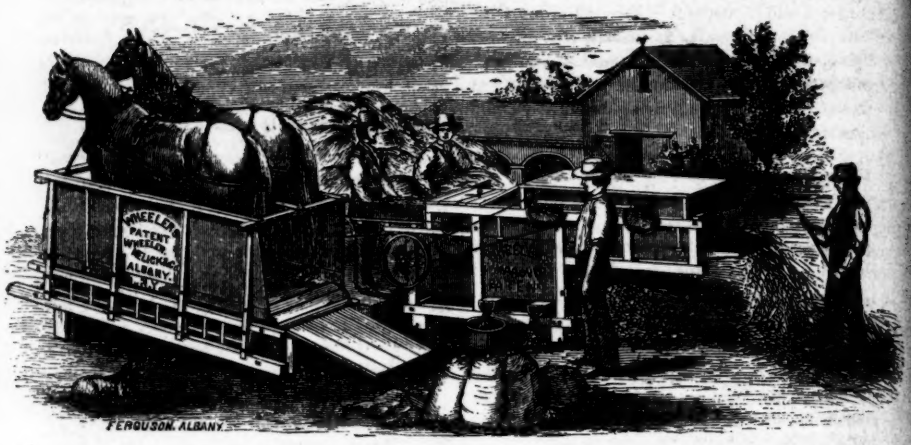

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